C 169

Government of Northern Rhodesia.

MEDICAL REPORT

ON

Health and Sanitary Conditions for the Year 1932.

LIVINGSTONE :
PRINTED BY THE GOVERNMENT PRINTER.
1933.

Government of Northern Rhodesia.

MEDICAL REPORT

ON

Health and Sanitary Conditions for the Year 1932.

LIVINGSTONE :
PRINTED BY THE GOVERNMENT PRINTER,
1933.

*15m—R483 8-33

NORTHERN RHODESIA.

Medical Report of Health and Sanitary Conditions for the Year 1932.

SECTION I.

ADMINISTRATION.

(a) Staff (as at 31st December, 1932).

EUROPEAN.

The authorised staff is shown in Table I at the end of this Report. The chief changes are enumerated below.

Promotions.

Dr. A Kinghorn, Deputy Director of Medical Services.

Appointments.

Miss A. S. M. Hutcheson, Welfare Sister.
Miss C. D. M. Hunt, Nursing Sister.
Miss D. Bonner, Nursing Sister.
Miss T. Fischer, Nursing Sister.
Miss D. L. C. Setchell, Nursing Sister.
Miss H. Grill, Nursing Sister.
Miss M. L. McPherson, Clerk.
Miss B. E. Greenwell, Learner Clerk.

Retirements.

Dr. H. T. Flannery, Medical Officer (Death).
Mrs. H. F. Walker, Nursing Sister (Death).
Dr. A. F. Wallace, Senior Medical Officer (Invalided).
Dr. J. Taylor, Health Officer (Resignation).
Dr. E. S. Adderley, Health Officer (Resignation).
Miss C. D. M. Hunt, Nursing Sister (Resignation).
Miss L. Stephens, Clerk (Resignation).
Dr. A. D. T. Whitfield, Medical Officer (temporary) (Appointment terminated).
Madame H. Choinier, Matron (temporary) (Appointment terminated).

The post of Deputy Director of Medical Services was created on 1st April, 1932.

Shortly after the commencement of the financial year 1932-33 it became apparent that the world-wide economic depression had at last reached Northern Rhodesia, and that steps would have to be taken to face the problem. So far as this Department was concerned this was done by leaving unfilled the vacancies created by the resignation of one Health Officer, the promotion and invaliding of two Senior Medical Officers and the termination of two temporary appointments.

2. Owing to the invaliding of Dr. Wallace in August, it was found necessary to withdraw the Medical Officer, Abercorn, and the work there was superintended until the end of the year by the Medical Officer, Kasama.

(b) Ordinances Affecting the Public Health enacted during 1932.

The Public Health (Drainage and Latrine) Regulations.

The Public Health (Abattoir and Transport of Meat) Regulations.

(c) **Finance.**

CALENDER YEAR 1932.

The following figures have been provided by the Treasury :

Total Revenue of Colony	£649,537 17 9

Health Vote Revenue.

Hospital Fees	£5,626 4 9
Medical subsidies	592 10 0
Sale of drugs and vaccines	135 16 6
	£6,354 11 3

Expenditure.

Personal emoluments	£38,166 7 10
Other charges	27,643 0 9
	£65,809 8 7

Health Vote expenditure = 10.13% of total revenue of Colony.

Comparative figures for the past four years are given in the following table :

	1929	1930	1931	1932
Expenditure, Health	£50,381	£59,009	£67,711	£65,809
Total Revenue, Colony	£632,615	£785,823	£859,489	£649,538
% Health expenditure to total revenue	7.96	7.51	7.86	10.13

SECTION II.

PUBLIC HEALTH.

General Remarks.

Few remarks are called for. The general health of the community, both European and native, has been good and no epidemic disease of serious import has occurred.

2. Consequent on the cessation of active development on the mines and the drastic retrenchment of personnel which resulted, a large body of unemployed and unemployable Europeans had settled around Ndola. A great deal of this floating population later made its way to Lusaka when work was commenced at the new Administrative Headquarters there. Amongst this section of the community malaria and venereal disease have been reported to be common, but following vigorous measures to improve housing conditions and sanitation, did not assume any great proportions.

3. Tour reports submitted by all District Officers indicate that the health of the natives in villages and reserves has been good, and several of them comment on signs of increased interest in the lay-out of villages, the better type of hut being erected and indications of an improvement in sanitation.

4. The efforts of the village natives to improve their conditions of life have been greatly assisted by mission activities. Elementary teaching in the villages is practically confined to these bodies and simple instruction in hygiene is included in the curricula. The missionaries themselves on their frequent tours of their districts also give talks to the villagers on the subject.

5. Government subsidises missions for medical work amongst natives to the extent of £2,950 per annum, and there is abundant evidence that this side of their work is vigorously prosecuted. Unfortunately returns have not been received from all of them, so that total figures cannot be provided at present. Another difficulty is that uniformity in the returns has not yet been achieved. Steps have been taken, however, to rectify this state of affairs. The Free Church of Scotland maintains doctors at Chitambo (Serenje), Lubwa (Chinsali) and Mwenzo (Isoka) ; the Garanganza Mission one at Kalene Hill (Mwinilunga) ; the Paris Evangelical Mission one at Sesheke (recalled during the year) ; London Missionary Society at Mbereshi and the Baila Batonga Mission at Kasenga (Namwala). Other missions, *e.g.*, the Universities Mission, South African General, as well as those already named, have trained nurses on many of their stations. These doctors, as part of their regular duties, pay periodical visits to the district Government station when the gaols and prisoners are inspected and treatment given to the Government officials.

6. The Deputy Director of Medical Services during the year inspected Fort Jameson and Petauke ; also Mwami and Nsadzu leper colonies, and Madzimoyo Mission.

(1) General Diseases.

One thousand four hundred and forty-two in-patients were treated in Government European hospitals with 33 deaths, as compared with 1,525 patients and 44 deaths during 1931.

The figures for native in-patients during the year were 7,046 with 363 deaths as compared with 8,603 with 436 deaths in 1931.

The decrease in the number of admissions is most noticeable in the hospitals along the railway line and has been due to the general reduction in the population. Further factors affecting the natives have been the increase in the number of rural dispensaries and in the amount of welfare work done.

Comparative admission figures for the past five years are given in the subjoined table :

	Europeans.		Natives.	
	In-patients.	Deaths.	In-patients.	Deaths.
1928	1,045	31	8,449	458
1929	1,078	21	8,874	446
1930	1,151	29	7,272	471
1931	1,525	44	8,603	436
1932	1,442	37	7,046	362

The percentage general case mortality in Government hospitals is as follows :

	Europeans.	Natives.
1928 ...	2.97	5.42
1929 ...	1.95	5.03
1930 ...	2.50	6.50
1931 ...	1.50	5.06
1932 ...	2.50	5.13

The following table shows the total cases treated in Native Hospitals, with numbers of deaths and mortality rates for 1930, 1931 and 1932.

	Cases Treated.			Deaths.			Mortality Per Cent.		
Station.	1930	1931	1932	1930	1931	1932	1930	1931	1932
Livingstone ...	1,205	1,268	1,116	134	145	115	13.27	11.43	10.31
Choma	628	766	304	7	23	11	1.115	3.02	3.61
Mazabuka ...	752	678	619	21	24	19	2.74	3.54	3.06
Lusaka	478	577	663	34	45	61	7.11	7.78	9.20
Broken Hill ...	1,359	1,407	788	69	95	54	5.08	6.15	6.85
Bwana Mkubwa...	—	551	643	—	34	32	—	6.17	4.97
Fort Jameson ...	327	453	349	20	26	28	6.12	5.75	8.02
Kasama	397	344	371	9	6	6	2.27	1.74	1.61
Fort Rosebery ...	352	446	330	2	4	10	.57	.89	3.03
Abercorn... ...	111	85	—	1	3	—	.9	3.53	—
Mongu	627	808	1,189	12	14	18	1.91	1.74	1.51
Balovale	209	288	674	8	9	9	3.83	3.12	1.33

It will be noted that there is a slight drop in the Livingstone mortality rate.

(2) Communicable Diseases.

(*a*) Mosquito or Insect-Borne.

Malaria and Blackwater Fever.

There were 17 deaths from malaria (one complicated by pulmonary congestion) and 22 from blackwater fever. On the lower European population of the Territory this shows a slightly worse state of affairs than during the previous year :

Year.	Population.	Deaths : Malaria.	Deaths : Blackwater.	Rate per 1,000.
1930 ...	12,000	25	20	3.75
1931 ...	13,846	22	19	2.96
1932 ...	10,553	17	22	3.69

The distribution of deaths from this cause was as follows :

Province	Deaths : Malaria, 1931	Deaths : Malaria, 1932	Deaths : Blackwater, 1931	Deaths : Blackwater, 1932
Luangwa (including mining area) ...	18	12	13	9
Batoka	3	2	3	4
Kafue	1	3	3	6
Rest of Territory	...	...	...	3
Total	22	17	19	22

2. It has already been stated that during the course of the year a large portion of the floating population left at Ndola on the cessation of development of the mines made its way to Lusaka and the results of this are shown in the above table. Deaths in the Luangwa Province from malaria and blackwater fell from 31 during 1931 to 21 during the year under review, while they rose in the Kafue Province, in which Lusaka is situated, from four to nine. It is this floating and indigent class that is most careless in the observance of prophylaxis against malaria.

3. It must be noted, however, that following intensive anti-malaria work on the mines and at Ndola the incidence of malaria was materially decreased, despite the fact that quinine prophylaxis on the mines is not in favour. The statement has been repeatedly made in these reports that the concensus of opinion amongst medical practitioners who have spent many years in the country is that quinine prophylaxis has proved its value, but in view of the continued and unnecessary toll of life exacted by the disease, including blackwater, this opinion requires to be emphasised again.

4. Totaquina as a substitute for quinine was introduced during the year, but in view of unfavourable reports of palpitation and other sequelae following its ingestion, it will no longer be provided.

Table showing death rates per 1,000 from malaria, blackwater fever, total climatic and total all causes for 20 years :

Year.	Total Climatic.	Blackwater Fever.	Malaria.	Total All Causes.
1912-13...	10.50	5.70	2.60	23.68
1913-14...	8.69	6.08	2.60	18.70
1914-15...	6.60	5.70	0.40	20.40
1915-16...	9.28	4.64	1.85	18.11
1916-17...	5.08	3.23	0.92	18.93
1917-18...	3.75	2.80	0.83	17.80
1919	5.20	2.00	2.40	28.40
1920	2.80	2.40	—	12.80
1921	5.80	2.70	1.80	15.40
1922	4.12	2.75	0.82	14.30
1923	5.20	3.40	1.05	13.42
1924	2.70	1.80	0.45	9.04
1925	2.82	1.52	1.30	13.70
1926	2.86	2.14	0.71	11.10
1927	2.88	1.23	1.10	9.89
1928	3.58	2.65	0.53	12.87
1929	1.20	1.00	0.10	9.32
1930	4.00	1.66	2.08	13.58
1931	3.32	1.37	1.59	15.16
1932	3.69	2.08	1.61	11.08

Table showing malaria and blackwater fever (European) in Government hospitals.

Station	1928		1929		1930		1931		1932	
	Malaria	Black-water Fever	Malaria	Black-water Fever	Malaria	Black-water Fever	Malaria	Black-water Fever	Malaria	Black-water Fever
Livingstone	107 (2)	6 (3)	166 (1)	2 (1)	175 (3)	7 (3)	216 (2)	4 (2)	124	7 (4)
Lusaka	74	1 (1)	69	2	93 (2)	1	88	5 (2)	111	7 (3)
Broken Hill ...	106	9 (1)	87	—	97	1	133 (1)	4 (1)	82 (1)	7 (2)
Bwana Mkubwa ...	—	—	—	—	—	—	41	1	70 (2)	—
Fort Jameson ...	17	1	7	1	11	—	15	1	11	—
Kasama	—	—	1	—	7	—	6	—	7	1
Mongu	—	—	—	—	—	—	1	—	—	—
Totals ...	304 (2)	17 (5)	330 (1)	5 (1)	383 (5)	9 (3)	500 (3)	15 (5)	405 (3)	22 (9)

NOTE.—Brackets indicate fatal cases.

Sleeping Sickness.

Twelve cases of this disease were notified, one European and 11 native.

2. During the year the Medical Officer, Fort Jameson, toured a portion of the Luangwa Valley in which sleeping sickness was formerly very prevalent, but without finding a single case. Some 5,218 natives were examined.

3. Dr. Newsom investigated an area lying between Mumbwa and Kasempa, which was under suspicion, but his results were negative. 1,475 natives were examined in 46 villages.

4. There are grounds for believing that deaths from the disease are occurring in the south-western portion of the Ndola District, which was found to be infected with the disease in 1920. Owing to shortness of staff it has not yet been possible to re-investigate this area.

5. Economically the disease is of minor importance in this country, as in general it occurs as sporadic cases.

(*b*) Infectious Diseases.

The notifications of this class of disease are as follows :

Infectious Diseases.

Diseases.	Europeans.	Asiatics.	Natives.
Blackwater	36	3	2
Relapsing Fever	3	—	49
Cerebro-spinal Meningitis	2	—	13
Trypanosomiasis	1	—	11
Typhoid Fever	15	—	7
Paratyphoid	9	—	2
Tuberculosis—Pulmonary	3	2	2
Adentis	—	—	2
Milliary	—	—	1
Spine	—	—	1
Inguinal Glands	—	—	1
Unclassified	—	—	3
Trachoma	—	—	1
Measles	45	1	100
Dysentery—Bacillary	5	1	33
Amoebic	37	—	49
Unclassified	2	—	42
Diptheria	1	—	1
Tropical Ulcers	1	—	315
Leprosy	—	5	190
Yaws	—	—	754
Spirillum Fever	—	2	—
Acute Anterior Poliomyelitis	1	—	1
Chicken Pox	30	—	228
Scarlet Fever	10	—	1
Puerperal Fever	—	—	3
Whooping Cough	77	—	236
Ringworm	6	—	—
Erysipelas	—	1	1
Pneumonia—Lobar	—	—	11
Broncho	—	—	3
Influenzal	—	—	1
Influenza	3	—	25
Mumps	1	—	—
Variola	—	—	61
Pneumococcal Meningitis	—	—	3
Gonorrhoea	—	—	2
Totals	288	15	2,186

Enteric Group.

The hospital incidence of this group is as shown in the table below :

Hospital Cases, 1930, 1931 and 1932.

	1930.				1931				1932.			
	Europeans.		Natives.		Europeans.		Natives.		Europeans.		Natives.	
	Cases.	D'ths.	Cases.	D'ths.	Cases.	D'ths.	Cases.	D'ths.	Cases.	D'ths.	Cases.	D'ths.
Livingstone ...	3	1	5	3	5	2	8	3	5	—	—	—
Lusaka ...	—	—	—	—	3	1	1	1	1	—	—	—
Mazabuka ...	—	—	—	—	—	—	1	—	—	—	1	1
Broken Hill ...	6	2	—	—	5	—	12	4	12	1	3	1
Bwana Mkubwa	—	—	—	—	—	—	1	1	1	—	2	2

Other infectious diseases as well as—

(*c*) Helminthic Diseases—

are dealt with under Section III.

VITAL STATISTICS.

(1) General Native Population.

The total native population of the Territory at the end of 1932 was estimated at 1,382,705, which shows an increase of 0.76 per cent. over the figure for the previous year. For the past five years the figures are :

1928	1929	1930	1931	1932
1,263,972	1,298,619	1,331,231	1,372,235	1,382,705

These figures are reached partly by estimate and cannot, therefore, be regarded as absolutely accurate.

2. No system of registration of native births, deaths and marriages is in force in Northern Rhodesia.

3. In 485 villages with a total population of 43,123, the number of children born during the year was 2,598, divided as to sex into 1,304 males and 1,294 females. This gives a crude birth rate of 60.2 per thousand, which may be compared with last year's figure of 59.6 in a group of 459 villages with a total population of 47,314.

4. In the same 485 villages quoted above 603 children under the age of one died during the year, and 396 between the ages of one and two. The death rate for infants under two is 384 per thousand.

Comparative figures for the past five years are, in round figures :

1928	1929	1930	1931	1932
470	380	340	330	380

It is difficult to ascribe any exact cause for the increase in this year's figure over that of the previous one. The commonest causes of infantile mortality are malaria and gastro-intestinal disorders resulting from the common native habit of feeding babies on gruel from the day of birth.

(2) **General European Population.**

The European population at the end of 1932 was 10,553, as compared with 13,846 in 1931, a decrease of 2,293, or 16.57 per cent. This was due to the cessation of development in the mining area and the closing down of several of the mines. In addition to those who left the country of their own accord, Government also assisted a considerable number of unemployed and their dependents to return to their countries of origin.

Population figures for the past four years are :

1929	1930	1931	1932
9,981	12,000	13,846	10,553

2. During the year 332 births were recorded, giving a rate of 31.46 per thousand. The birth rates for 1931 and 1930 were 24.05 and 22.75 respectively.

3. Deaths during the year numbered 117, which gives a rate of 11.08 per thousand, as compared with 15.16 in the previous year. The figures for the past four years are :

1929	1930	1931	1932
9.32	13.58	15.16	11.08

The decrease in the death rate during the year is particularly gratifying in view of the large amount of unemployment prevailing in the Territory. To a very large extent the decrease may be credited to the efforts of Government in providing relief, appointing welfare sisters at the centres where the bulk of the unemployed had congregated and superintending conditions relating to the housing and general sanitation of this class of the community.

4. The deaths, according to age periods, during the past five years are shown in the following table, while the causes of death are given in the succeeding one. It will be noticed that of the total of 117, 39 are due to malaria (16), malaria and pulmonary congestion (1) and blackwater (22). This total of 39, or thirty-three and a third per cent. of all deaths is an evidence of the importance of a vigorous prosecution of anti-malarial measures throughout the country.

TABLE III.

EUROPEAN DEATHS, SHOWING AGE PERIODS.

	0–1	1–5	5–15	15–25	25–35	35–45	45–55	55–65	65–75	75–85	85–95	Unknown	Total
1928 ...	15	2	3	11	14	19	18	9	4	1	—	1	97
1929 ...	21	5	4	12	12	4	13	13	3	1	1	4	93
1930 ...	28	9	6	19	27	27	27	11	4	—	—	5	163
1931 ...	28	21	4	21	31	27	36	24	13	—	—	5	210
1932 ...	24	7	2	12	21	23	10	11	5	2	—	—	117

The following table shows the causes of deaths as given in the Registrar's Return:

TABLE A.

Causes of Deaths.	No.
Cerebral Tumours	1
Cellulitis of Neck	1
Blackwater	22
Broncho Pneumonia	1
Malaria	16
Peritonitis	1
Carcinoma of Stomach	1
Typhoid	2
Lobar Pneumonia and Empyema	1
Pneumococcal Meningitis	1
Acute Amoebiasis	1
Abscess of the Liver	2
Perforation of Gall Bladder	1
Chronic Nephritis	3
Cardiac Debility	8
Suicide	3
Premature Birth	3
Gunshot Wound	3
Chronic Streptococcal Pneumonia	1
Motor Accident	2
Enteritis under 2 years	4
Malaria and Pulmonary Congestion	1
Inanition	1
Heart Failure after Child Birth	1
Meningitis	2
Hepatic Cirrhosis	1
Pneumonia	4
Infantile Convulsions	1
Cerebral Haemorrhage	1
Mining Accident	1
Dysentery	2
Septicaemia	1
Pulmonary Tuberculosis	3
Acute Hepatitis	1
Aneurism	1
Myocarditis	1
Intussusception	1
Myocardiac Degeneration	1
Haemorrhage of Lungs	1
Apoplexy	1
Marasmus	1
Acute Appendicitis	1
Multiple Injuries	1
Senile Decay	1
Natural Causes	1
Septic Laryngitis	1
Drowning	1
Internal Haemorrhage	1
Rheumatoid Arthritis	1
Aeroplane Accident	1
Hydrocephalus Chronica	1
Whooping Cough	1
Diarrhoea	1
Total	117

5. The distribution of deaths in provinces is as follows:

Luangwa	75
Batoka	14
Kafue	18
Awemba	2
Barotse	4
Mweru Luapula	1
Tanganyika	1
Kasempa	2
	117

6. Twenty-four deaths occurred amongst infants under the age of one, the causes being as follows :

Enteritis	4
Diarrhoea...	1
Malaria	5
Inanition	1
Premature Birth	3
Intussusception	1
Heart Failure	4
Pneumococcal Meningitis	1
Whooping Cough	1
Marasmus	1
Internal Haemorrhage	1
Hydrocephalus Chronica	1
	24

These deaths represent 72.29 per thousand on the total births for the year.

Comparative figures are :

	1929	1930	1931	1932
No. deaths	21	28	28	24
Percentage deaths to births ...	9.9	10.25	8.4	7.23

Here, too, the decrease in the death rate may be ascribed to increased child welfare work.

(3) European Officials.

As will be seen from the sub-joined table statistics relating to officials show a slight deterioration over those for former years. A departmental circular was issued emphasing the importance of such elementary precautions as proper personal prophylaxis against malaria, boiling water and milk, adequate exercise, proper food and care in the use of alcohol, and it is hoped that this will result in a reduction of some of the figures in future years.

Table showing the sick, invaliding and death rates of European officials :

	1928	1929	1930	1931	1932
Total number of officials resident	446	515	621	678	750
Average number resident	372	429	558	554	598
Total number on sick list	175	184	232	343	352
Total number of days on sick list	1,587	1,916	1,964	3,334	3,661
Average daily number on sick list	4.34	5.25	5.66	9.13	10.03
Percentage of sick to average number resident	1.17	1.22	1.01	1.64	1.67
Average number of days on sick list for each patient	9.07	10.41	8.89	9.72	10.40
Average sick time to each resident	4.27	4.47	3.52	6.01	6.12
Total number invalided...	2	6	—	2	2
Percentage of invalidings to total residents ...	0.45	1.16	—	0.29	0.26
Total deaths	2	4	1	5	5
Percentage of deaths to total residents ...	0.45	0.78	0.16	0.73	0.66
Percentage of deaths to average number resident	0.54	0.93	0.18	0.92	0.83

The causes of death amongst officials were :

Dysentery	1
Carcinoma	1
Accidental Drowning	1
Suicide	2

while those of invaliding were :

Gastric Ulcer	1
Iritis	1

(4) Native Officials.

Statistics are not available for the year under review. Arrangements were made to collect the data during 1933 and the collated information will be given in future.

SECTION III.

HYGIENE AND SANITATION.

General Review of Work Done and Progress Made.

The world-wide financial depression, which at the close of 1931 had already begun to affect adversely the industries of the Territory, continued during 1932, causing an increase in the numbers of the unemployed, both European and African, reducing the numbers of the European population by emigration and stopping all schemes for new development except at the New Capital site at Lusaka, where Government was carrying out a policy previously decided on.

While it is hoped that the peak of the depression has already been reached, there does not appear, at the close of the year, any definite indication that marked improvements can be looked for in the near future.

The depression caused a decline in Government revenue, necessitating retrenchment in staff and activities in almost all departments and has put off indefinitely the launching of an active campaign in the field of preventive medicine.

The report for 1932 has therefore mainly to record routine work done ; efforts directed to consolidate the position achieved during the previous year and activities along lines which called for no increase in funds. The Department, in 1932, has endeavoured to make bricks without straw.

The year passed without any serious outbreak of infectious disease and it is worthy of record that wherever measures for the prevention of disease could be undertaken, there has been a very great reduction in such diseases.

The staff of the Department employed wholly on preventive measures were stationed during the year as follows :

H. S. de Boer ...	...	Deputy Director of Sanitary Services, departed on home leave on 1st July, 1932.
N. M. Maclennan	...	Senior Health Officer ; Senior Health Officer, Ndola, to 20th June, 1932, then Acting Deputy Director of Sanitary Services on departure of Deputy Director of Sanitary Services to close of year.
A. J. Wilkins ...	...	Health Officer ; Medical Officer of Health, Livingstone.
E. S. Adderley	...	Health Officer ; Medical Officer of Health, Ndola.
M. A. Viljoen	...	Health Inspector, Ndola.
G. F. Newbury	...	Health Inspector, Livingstone, to Lusaka from 16th April, 1932, to close of year.
Miss R. Nankin	...	Clerk, Ndola.

Owing to the need that existed for economy and to the absence of the Deputy Director on leave during the dry months of the year, only towns adjacent to the railways were visited in 1932.

The Health Inspector stationed at Livingstone was withdrawn and posted to Lusaka to assist in the control of the development of that area which followed the beginning of Government activities.

Local Government.

Ndola was granted municipal status towards the close of the year, making the second town in this Territory to be given fuller powers of local government. Government continued to assist this new municipal authority by maintaining a Medical Officer of Health in the district. The area placed under municipal control at Ndola has been limited to that previously under the Town Management Board, which area did not include the suburb ordinarily referred to as Manners Town or the other adjacent areas, which have been recently thrown open for development and where the larger proportion of the poorer white population was settling.

(1) Mosquito and Insect-Borne Diseases.

(*a*) *Malaria.*

With Government staff available throughout the year at Ndola and Livingstone, the anti-mosquito measures inaugurated in 1931 were maintained and extended.

2. The Medical Officer of Health, Ndola, continued his observations on Anopheles breeding and incidence throughout the township and at the close of the year submitted a very complete report on his findings.

The following is a list of the species of Anopheles identified to date in the area. The list includes all species either found in the adult form or bred out from larvae collected :

A. gambiae.
A. funestus.
A. mauritianus.
A. maculipalpis.
A. marshalli.
A. squamosus.
A. squamosus var. cydippis.
A. rufipes.
A. pretoriensis.
A. theileri.
A. argenteolobatus.
A. distinctus.
A. walravensi.

A. gambiae and *A. funestus* were the only species found commonly in or around human habitations. Amongst several thousands of adult Anopheles collected in houses, specimens of other species were found as follows :

A. maculipalpis on ten occasions.
A. squamosus once.
A. mauritianus on three occasions.
A. distinctus twice.

A. gambiae were found mainly during the rainy weather (December to April). Between July and November even the larvae of *A. gambiae* could not be found in the area. *A. funestus* appeared in numbers a little later in the rainy season than *A. gambiae* and its increased incidence in houses was found to be associated with the rising of the ground water, causing increased seepage in the vleis and swamps. Even in the dry and cold season *A. funestus* larvae could be found in the Itawa River area though not in considerable numbers.

3. Investigations in Livingstone proved that *A. gambiae* was the most common Anopheles in the area. *A. funestus* larvae were found along the banks of the Maramba River lying east and south of the town.

Intensive measures of Anopheles control by regular oiling were carried out in Ndola and Livingstone during the year, funds being provided for the work by both Government and the local authorities.

4. With the appointment of a Health Inspector at Lusaka, routine oiling of pools in this area was also made possible, Government providing funds for the work.

5. Government funds were also expended on anti-malaria works at Fort Jameson and Mazabuka. At Ndola the Medical Officer of Health with the assistance of prison labour carried out a partial drainage scheme by earth drains in the Kansenshi Dambo. It is hoped that labour will continue to be available during the new year to complete this important work for dealing with other damboes around the town.

The Medical Officer, Fort Rosebery, controlled Anopheles breeding by keeping the banks of the Mansa River within the township boundaries cleaned of weeds and canalised as far as possible.

6. Sir Malcolm Watson, of the Ross Institute, revisited the Roan Antelope Mine during the year. He had originally advised on the mosquito control measures which have been carried out in that area. Dr. Dalzell, who was employed on the staff of the mine almost wholly on anti-marlarial work during the construction period, has now been withdrawn. The large system of drains provided in the scheme have been maintained efficiently and oiling of all possible breeding places continued, so that it is possible to state that the area around the mine continues to be the best protected against malaria in the Territory.

7. At Nkana Mine much attention has been given during the year to the drainage of the whole area covered by workshops, European residences and native compounds. The area was naturally flat and in the rains water tended to stand in puddles, providing many suitable breeding places for *A. gambiae.* In all about five miles of brick storm water drains were completed throughout the camp site.

In addition to the above, spraying of pools was continued. There are a number of damboes around the Nkana camp which still remain fruitful sources of Anopheles breeding. The measures so far carried out have reduced the incidence of malaria but, until breeding in these vleis is prevented effectively, malaria will, it is feared, continue to be the most common cause of ill health amongst mine employees.

8. In all remaining townships in the Territory anti-mosquito measures again this year were mainly directed to a keeping of as large an area as possible around dwellings free of long grass and bush, together with effective regular collections of tins, etc. From some areas the filling in of excavations has been reported.

(*b*) *Blackwater.*

Twenty-two deaths amongst Europeans were reported as due to this disease, being nearly 19 per cent. of the total deaths reported. This shows a considerable increase on 1931 when blackwater was responsible for 9 per cent. of the deaths reported.

Forty-one cases of the disease were reported during the year, three being in Asiatics and two in Africans. The Asiatic cases were reported from Ndola and Livingstone and the native cases from Balovale and Livingstone.

(*c*) *Yellow Fever.*

Dr. Maclennan represented this Territory at the International Conference of Representatives of the Health Services of Central African Territories and British India held at Cape Town in November.

The report of the Conference has just become available and it is hoped that the countries concerned will now be able to come to some unanimity with regard to the measures to be instituted in each Territory concerned for preventing the introduction of yellow fever into areas such as Northern Rhodesia not, up to the present, infected with the disease.

So far as can be seen to-day, there appears very little reason for Northern Rhodesia having any direct communication with West Africa, except as serving as a halting place for 'planes proceeding further east.

(*d*) *Trypanosomiasis.*

Twelve fresh cases were reported during the year. One case in a European was notified from Kasama, the remaining cases in natives were reported from the undermentioned stations :

Ndola	2	Serenje	2
Fort Jameson	3	Kasempa	1
Solwezi	2		

The Medical Officer, Fort Jameson, toured the Lundazi Sub-district during the year, visiting 67 villages and examining 5,218 persons. No cases of sleeping sickness were discovered in the sub-district toured.

(*e*) *Relapsing Fever.*

Fifty-four cases were reported during the year of which three were in Europeans.

Fort Jameson would appear to be the most seriously affected area, as of the cases notified 48 were from that district, the remaining six being from Livingstone.

(2) Epidemic Diseases.

(*a*) *Smallpox.*

Sixty-one cases were reported during the year under headings Smallpox, Alastrim and Kaffirpox. The cases were reported from districts as follows :

Fort Rosebery...	12	Namwala	7
Mongu	40	Solwezi	2

In 1931 the cases reported totalled 152 and 102 of these were in the Fort Jameson District.

Vaccinations.

Government supplied 10,550 tubes of lymph during the year and 32,978 vaccinations were reported as made with the lymph provided. The largest number of vaccinations were reported to have been done at the following stations :

Mongu	14,329	Fort Jameson...	8,528
Fort Rosebery	8,792		

(*c*) *Cerebro-spinal Meningitis.*

Fifteen cases of this disease were reported during the year, two of which occurred amongst Europeans. This shows considerable improvements on the figures for 1930 and 1931 when 97 and 63 cases were reported respectively.

The greatest improvement is in the mining areas and this must be considered as due to the completion of the developmental period and to the fall in the number of the employed, enabling those remaining to be better housed.

(*d*) *Dysentery.*

Eighty cases of bacillary and 86 cases of amoebic dysentery were reported during the year. Of the cases reported 7 bacillary and 37 amoebic were amongst Europeans.

2. Amoebic dysentery appears to be endemic in the Lusaka area, as of the 86 cases reported from the Territory 46 (24 European and 22 native) cases are from that centre. In 1931 Lusaka reported 44 cases (32 European and 12 native). The Medical Officer, Lusaka, in his report stated that his diagnoses in all cases have been confirmed by the finding of the *Entamoeba histolytica* in the stools.

Post mortem examinations in four of the five fatal cases occurring in the Lusaka hospital showed severe irritation of colon from hepatic flexure to rectum and in all these cases *Entamoeba histolytica* was found in scrapings from ulcers.

3. Lusaka is sited on an area in which limestone (dolomite) outcrops on the surface and is seldom more than a few feet below the surface. The water supply in most of the area is still obtained from private shallow wells sunk in the dolomite and during the rains the ground water is reported to rise to a few feet from the surface. Drinking water must be considerably polluted.

4. The figures for Nkana for the year show a considerable improvement on those of 1931. In 1932 9 cases of amoebiasis and 3 of bacillary dysentery were reported with no deaths as compared with amoebiasis 26, bacillary dysentery 8, with 12 deaths in 1931.

5. At the Roan Antelope Copper Mine there was only one death due to bacillary dysentery.

(*e*) *Diphtheria.*

Four cases of diphtheria were reported during the year, three from Lusaka and one from Broken Hill. This disease does not appear to be common in the Territory but as tracheotomy had to be performed in one case, might occur in severe form.

(*f*) *Enteric Fever Group.*

Thirty-four cases were reported during the year (23 in Europeans and 9 in natives) with 6 deaths, showing a considerable reduction on the 1931 figures, viz., 101 cases (31 European and 70 natives) with 28 deaths.

The following table shows the areas from which cases were reported :

	Europeans.		Natives.		
	Typhoid.	Paratyphoid.	Typhoid.	Paratyphoid.	Total.
Livingstone ...	2	4	1	—	7
Broken Hill ...	12	2	3	—	17
Nkana ...	—	—	1	—	1
Mufulira ...	1	—	1	—	2
Lusaka ...	—	1	1	—	2
Solwezi ...	—	—	—	2	2
Ndola	—	1	—	—	1
	15	8	7	2	32

2. Seventeen of the cases reported, it will be seen, occurred at Broken Hill, the cases occurring in months as follows :

January ...	1	June	1
February ...	1	August ...	1
March	2	November ...	4
April	3	December ...	2
May	1		

It was thought that the disease was being kept alive in the town by carriers and several persons suspected were examined. One native cook was found to be suspicious, but otherwise very little information was obtained. The native cook was found working in a house in which a case had occurred and was admitted into hospital for treatment.

3. Routine inoculation with T.A.B. vaccine was carried out at the Roan Antelope and Nkana Mines ; Nkana reported only one case and the Roan nil.

(*g*) *Tuberculosis.*

Fifty-one cases of tuberculosis were reported during the year, of which five cases were of forms of the disease other than pulmonary.

Of the 46 native cases reported, 27 ended fatally, making 58 per cent. of the cases recorded.

Three deaths in Europeans were reported as being due to this disease.

(*h*) *Leprosy.*

One hundred and eighty-four cases were notified during the year. The Medical Officer, Balovale, reports that in his district nearly 700 males have been exempted since 1931 from hut tax owing to this disease. The early cases in his area present a macular erythemateous rash and nerve leprosy appears to be the common type.

The disease is reported to progress very slowly and natives affected do not often consider it a serious affliction and actually sometimes an advantage as it permits of exemption being obtained from the payment of hut tax. Early cases do not seek treatment.

(i) *Rabies.*

Dogs suspected as suffering from rabies were reported during the year from Mwinilunga, Kasama, Mazabuka and Mumbwa.

2. Regulations for the registration and control of dogs under the Control of Dogs Consolidation Ordinance, 1929, were applied during the year to the Barotse Province. A pamphlet on rabies was prepared during the year by the Senior Health Officer and the Veterinary Research Officer and published. The pamphlet was circulated amongst the public and schools in the Territory.

(*j*) *Measles.*

Outbreaks of measles were reported from various native areas. The disease was stated to be mild in form. 45 cases in Europeans were notified.

(*k*) *Whooping Cough.*

Seventy-seven cases in Europeans and 236 in natives were reported during the year.

(*l*) *Pneumonia and Influenza.*

Although pneumonia and influenza continued to be the commonest reported cause of death in natives, this year the records show a considerable reduction in the cases occurring. The improvement is most marked in the mine townships, especially so at the Roan Antelope Mine.

Tables showing cases reported from various centres are appended together with the figures for 1931 for comparison.

2. The Roan Antelope Mine reports the inoculation of all native employees against this disease with vaccines specially prepared on the mine from cultures made from local strains.

Pneumonia at the Roan during 1932 was only responsible for 13.64 per cent. of all native deaths, while in 1931 it accounted for 53.93 per cent. At Nkana the disease was responsible for 74.57 per cent of all deaths.

	Lobar and Broncho-Pneumonia.				Influenza and Influenzal-Pneumonia.				Total.			
	Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.	
	1931	1932	1931	1932	1931	1932	1931	1932	1931	1932	1931	1932
Livingstone	—	—	—	—	229	227	66	41	229	227	66	41
Choma	10	19	5	6	6	2	—	—	16	21	5	6
Mazabuka	7	12	4	2	4	21	—	—	11	33	4	2
Lusaka	23	44	8	15	14	6	2	—	37	50	10	15
Broken Hill (including Mine) ...	107	17	27	—	511	135	17	22	618	152	44	22
Bwana Mkubwa...	14	—	3	—	36	40	3	7	50	40	6	7
Fort Rosebery	—	—	—	—	4	19	—	3	4	19	—	3
Kasama	6	—	2	—	4	10	—	1	10	10	2	1
Fort Jameson	13	5	4	2	76	15	—	2	89	20	4	4
Mongu	12	10	4	2	10	55	—	1	22	65	4	3
Balovale	6	3	—	2	—	10	—	—	6	13	—	2
Mufulira Mine	161	2	31	—	157	—	5	—	318	2	36	—
Nkana Mine	382	144	92	43	466	176	30	1	848	320	122	44
Roan Antelope	244	23	50	3	316	79	4	—	560	102	54	3

(*m*) *Venereal Diseases.*

The Medical Officer, Lusaka, reports that the number of Europeans found infected is increasing in his district. This is possibly due to the increase of poor whites in the area during the year.

While all forms of venereal diseases in natives are reported from every medical centre, Mongu and Balovale, stations away from the line, report the largest number of cases.

	1931.		1932.	
	Syphilis.	Gonorrhoea.	Syphilis.	Gonorrhoea.
Roan Antelope	22	1	13	1
Mufulira	24	8	3	4
Nkana	21	7	22	1
Livingstone	92	24	75	10
Mazabuka	130	7	92	15
Broken Hill	84	4	68	5
Bwana Mkubwa	104	4	96	12
Fort Rosebery...	105	31	67	4
Mongu	1,115	86	518	40
Balovale	67	18	298	42
Choma	33	7	28	1
Kasama	26	2	49	4
Fort Jameson	41	24	43	4
Lusaka	493	15	98	14
Totals	2,357	238	1,476	167

(3) Helminthic Diseases.

(*a*) *Ankylostomiasis.*

Smears from faeces of all patients admitted to the native hospital at Livingstone are examined for ova. Ankylostoma ova were found in 41 per cent. of the patients. It is more than likely that if methods of concentration of ova were used in examinations, a larger percentage would have been found affected.

2. The Medical Officer, Balovale, reports that Ankylostoma ova were found in 70 per cent. of cases examined at his station.

(*b*) *Schistosomiasis.*

This was again reported from most stations. Lusaka reports one case in a European, the infection being of long standing.

2. The European public appear not to appreciate that throughout most of the Territory bathing in rivers and streams is associated with risk of infection with this disease.

It is important that the whole question should be investigated at an early date.

(*c*) *Taeniasis.*

Taenia solium was reported in three cases from Lusaka, two cases in Europeans and one in a native. *Taenia saginata* occurs more commonly.

(4) General Measures of Sanitation.

(*a*) *Sewage Disposal.*

Very little can be added to what was said in last year's report.

2. The water carriage system at the Roan Antelope Mine continued to work effectively and at Nkana the work of providing septic tank systems throughout the camp was completed.

3. Bucket latrines of an improved type were provided for the native compound at the Broken Hill Mine.

4. Water-borne sanitation with septic tanks was installed in the new buildings erected at Lusaka.

5. The new native hospital at Livingstone and the combined hospital at Ndola were provided with septic tank systems.

6. During the year a duplicate pail system was introduced in the Ndola municipal area. The system is reported to be giving satisfaction.

7. At Livingstone no considerable improvements were made in the year but the Council have approved of the use of mechanical transport and propose to institute a complete double bucket system. A central disposal area has been chosen. It is expected these improvements will be introduced in the new year.

8. At Lusaka a better type of bucket has been put into use and a scheme has been prepared for a double bucket system.

(*b*) *Scavenging and Refuse Disposal.*

Tipping of refuse remains the almost universal method of disposal.

Endeavours have been made to utilise the refuse collected in the filling in of excavations around townships which have been potential breeding places for Anopheles.

At the Roan Antelope refuse was dumped in low lying areas and immediately covered with slimes from the mine workings.

(*c*) *Drainage.*

At Ndola the Health Staff were instrumental in getting some drainage work carried out in Kansenshi Dambo and also many minor drainage schemes on private land in Manners Town.

2. The Medical Officer of Health, Livingstone, has seen to the canalising of the drain taking waste water from the railway area and has had many earth drains in the outskirts of the town cleared to give better run-aways for storm water.

3. At Nkana approximately five miles of brick-lined storm water drains were constructed.

4. At the Roan Antelope Mine all fresh seepage outcrops discovered were drained and all drainage works maintained. The heavy rains caused considerable wash-aways in places, but immediate action was taken to remedy the damage done.

(*d*) *Water Supplies.*

1. *Ndola.*—The new water supply and reticulation system was completed and residents were able to obtain a satisfactory supply without having to transport it by hand for long distances.

First samples of the supply examined showed contamination, but since then reports have been satisfactory and up to date it has not been found necessary to treat the water.

2. *Livingstone.*—The scheme prepared in 1931 is being given effect to and it is hoped will be completed during the new year.

3. *Lusaka.*—The New Capital area is supplied with piped water from boreholes, while the old town still depends for its supply on shallow wells in the dolomite. All water in the area is thought to be exposed to risk of contamination as all waste water is disposed of in the soil and during the rains the ground water rises in many parts to only a few feet of the surface.

It is hoped that a chlorination plant will soon be introduced to treat the water from the New Capital boreholes and, further, that it will be found possible to extend the area supplied so as to include the old town.

4. *Fort Jameson.*—A power plant has been fitted over the borehole in the centre of the township.

(*e*) *Clearing of Bush and Undergrowth.*

All townships are again reported to have been kept clear of bush and undergrowth.

(*f*) *Sanitary Inspections.*

1. *Livingstone.*—Routine inspection of all trade premises engaged in either the production or sale of foodstuffs was carried out and although in many cases the premises are not suitably constructed for the trade, much improvement in general cleanliness has resulted.

One hundred and sixty-six warnings *re* nuisances were served, resulting in 156 abatements.

Sixty-nine intimation notices were served and 61 were complied with ; eight notices were still outstanding. Three prosecutions were made, in each case a conviction being obtained.

2. *Ndola.*—Four thousand seven hundred and fifteen inspections were made during the year, the area controlled including the developing districts surrounding the municipal area.

Five hundred and seventy-nine notices to abate general nuisances were served, 14 prosecutions were made and convictions were obtained in all cases, fines being imposed and, where necessary, orders obtained for works called for to be completed in a specified time.

Four hundred and sixty-nine notices were served in respect to mosquito nuisances, while in many hundreds of cases verbal notices sufficed.

Very considerable improvements were made during the year in all premises dealing with the sale and preparation for sale of foodstuffs. A high standard of cleanliness was insisted on, but it is thought that the standard will degenerate if inspections are not made at frequent intervals.

3. *Lusaka.*—One thousand three hundred and sixty-two routine inspections were made and 190 nuisances were abated.

Thirty-six intimation notices and eight statutory notices were served ; in all cases the notices were complied with.

A Health Inspector was only stationed at Lusaka late in the year and, although much improvement has already resulted from his efforts, much still remains to be done.

(5) School Hygiene.

All Government European schools in the Territory were visited by Medical Officers and Dentists during the year.

Parents are circularised previous to such inspections and before children can be examined by doctor or dentist, the parents' consent to such examinations are obtained. It is unfortunately true that some parents refuse to have their children examined.

Parents of the children found requiring medical or dental attention are informed of the conditions found and are advised to obtain treatment. The medical examinations are carried out by Government Medical Officers, and the dental by dentists subsidised by Government. These dentists, for their subsidies, are required to treat school children at fixed reduced rates and Government assist parents unable to pay even these charges, by, when satisfied of their circumstances, paying the necessary fees.

2. Medical Officers and Dental Surgeons continue annually to report that advice given is very often neglected and that inspections carried out become very nearly a farce when each year they find the same children with identical lesions requiring attention and with, in many cases, the condition growing steadily worse.

It is hoped that it soon will be possible for Government to insist that all children attending Government schools should be examined by Government Medical Officers and Dentists at regular intervals and that, when advice is given to parents, they are required to see that the instructions are carried out.

3. Seven hundred and thirty-five children in all were examined by Medical Officers and a not inconsiderable number were found requiring treatment. Tonsils and adenoids requiring surgical attention were reported in 36 children, 136 were found unvaccinated and 106 with enlarged spleens.

4. At Mazabuka, where there is a boarding school for boys, which is also attended by day scholars, the Medical Officer specially commented on the better physique and general health of the boarders as compared with the day scholars. Similar comment was made by the Medical Officer reporting on the children at Lusaka, where Government maintains a hostel for both boys and girls. It is believed that the better health of the boarders is due to their more balanced diets. Children from poor white families are inadequately fed.

5. Conditions found at the Silver Rest School were extremely unsatisfactory ; here the children attending school are reported as dirty and in almost all cases covered with pediculi. The spleen index at the school was 59, many of the spleens being of considerable size.

Conditions in some of the houses from which these children come are reported as being far from sanitary.

6. A certain number of school inspections were carried out by the Medical Officers of Health from Livingstone and Ndola and their reports provide some interesting figures :

NUTRITION.

Age in Years ...	5	6	7	8	9	10	11	12	13	14	15	16
					Weight in lbs. ;							
School :												
Nkana	43	42	46	53	54	65	73	73	75	87	89	95
Luanshya ...	41	49	57	60	68	69	73	88	94	100	102	—
Ndola	41	43	42	50	59	61	74	75	90	109	116	96
Bwana Mkubwa ...	44	42	52	51	57	65	79	91	94	98	—	—
Lusaka	—	53	46	54	61	68	69	79	88	109	113	121
Silver Rest ...	—	—	58	55	57	77	72	73	85	110	—	—
Livingstone ...	—	45	47	51	60	65	69	79	87	82	—	—

HAEMOGLOBIN INDEX.

School.	Age period 5-8 years.	Age period 9-11 years.	Age period Over 12 years.	Average Total.
Nkana	77.5	84	82	81
Luanshya	83	86	88	85.4
Ndola	91	92	86	89.7
Bwana Mkubwa ...	—	—	—	83
Lusaka	87.5	75	85	82.5
Livingstone ...	—	—	—	79

MALARIA—SPLENIC INDEX.

School.	No. of Spleens.	Splenic Index.	Remarks.
Livingstone	18	17	5 per cent. of children with parasites in blood.
Lusaka	21	16	Many large spleens.
Silver Rest	17	59	Most spleens large.
Ndola	16	18	
Luanshya	4	4	
Nkana	22	15	
Bwana Mkubwa	4	12	
Mazabuka	13	21	

7. The reports submitted by the Dental Surgeons show that very few children in the country have teeth free from caries and that routine inspections will not do much good unless these inspections are followed by enforced treatment.

Dental inspections have been done regularly for some years now and if treatment advised had been followed, the figures below would not have been possible.

School.	No. examined.	No. requiring treatment.	Per cent.
Choma	16	12	75
Livingstone ...	77	65	84
Lusaka	111	88	79
Mazabuka	50	36	72
Luanshya	53	48	90
Nkana	102	87	85
Bwana Mkubwa ...	31	27	87
Ndola	82	64	78

Of the children examined at Livingstone, 19 were reported as requiring fillings to deciduous teeth, 57 for permanent teeth and extractions were advised for 15 children in respect to deciduous teeth and 19 as to permanent.

There were children reported as requiring treatment for more than ten teeth.

(6) Labour Conditions.

(*a*) *General Industrial Conditions.*

With the slump in trade, the closing down of two mines and the completion of the developmental stage at the Roan Antelope and Nkana Mines, the numbers of Europeans and natives employed dropped considerably. A number of Europeans left the country and it is understood that the exodus was still continuing at the close of the year. We are still left, however, with, considering our small total white population, a not inconsiderable proportion of unemployed.

2. A Commission to enquire into unemployment was appointed during the year and submitted a report to Government. Many of the recommendations made in that report have already been given effect to. There are a number of European families being provided with Government rations.

3. Many of the natives discharged from employment returned to their villages, but numbers also drifted into town native compounds, hanging on in the hope of finding work. Those remaining unemployed are being returned to their Reserves.

(*b*) *Recruitment.*

Employers of labour are finding that it is easy to-day to obtain all the labour they require from applicants seeking on their own for work. There is little or no professional recruiting at present.

(*c*) *Housing.*

Over-crowding in mine compounds is to-day almost a thing of the past and the increased accommodation available has been reflected in the considerable drop in the incidence of diseases, such as pneumonia and cerebro-spinal meningitis.

At Nkana some of the huts still have earth floors.

2. Housing conditions of labour remain, however, outside the mines, generally unsatisfactory, but action to improve this must await a stabilising of the financial position.

3. Government completed new barracks for the Northern Rhodesia Police at Lusaka during the year and these are now occupied. The new quarters provide accommodation considerably in advance of anything previously available. Water-borne sanitation was installed and ample provision made for washing, bathing, etc.

4. Very little or no improvement is to be reported in township compounds. The Ndola township native African compound which has been reported on unfavourably during the last two years still remains in its unsatisfactory state.

(*d*) *Welfare and Medical Care of Native Labour.*

The Annual Reports of the Chief Medical Officers of Nkana and Roan Antelope both record considerable development in safety and first aid work on these two mines. At the Roan Antelope it is compulsory for all underground boss boys to attend an advanced course in first aid which includes general rescue work, the treatment of gassing and electrocution cases, as well as the usual methods of dealing with general injuries.

All new native employees are given a course of lectures on discipline, general safety practice, sanitation and personal hygiene prior to being allotted to any department.

Rubber leggings, boots and coats are supplied to all underground natives. It has been found that the leggings and boots have reduced considerably the number of foot injuries. (At Nkana leg and foot injuries account for 59.36 per cent. of all injuries and at the Roan Antelope for 50 per cent.).

2. At Nkana in September a native first aid class was commenced under the auspices of the South African Red Cross Society. The scheme of training is devised with special reference to major mining accidents as well as the treatment of minor injuries. Prevention of accidents is stressed and at least one general health talk is included in the course. At the end of the course 25 natives entered for the examination, 24 of whom received the Society's Certificate and First Aid Badge.

3. At the Roan Antelope the mortality rate for accidents was reduced from 2.4 per 1,000 in 1931 to 1.72 in 1932. The figures for Nkana in 1931 and 1932 were 3.45 and 2.38 respectively. These figures compare favourably with that of the Rand Mines where the 1932 rate was 2.65 per 1,000.

4. The improvement in the general health of the labour of the mines is shown in the fall of the morbidity and mortality rates. At the Roan the daily incapacity rate dropped from 7.28 per cent. in 1931 to 3.9 per cent. in 1932, and the death rate for disease from 17 per 1,000 in 1931 to 7.76 in 1932. At Broken Hill Mine the general death rate dropped from 12.27 per 1,000 in 1931 to 2.39 in 1932. At Nkana the death rate for disease dropped from 38.91 per 1,000 to 15.28. The mortality rate for disease from the Rand Mine group was 7.74 per 1,000 in 1932.

(7) Housing and Town Planning.

Outside of development at Lusaka, where Government proceeded with the erection of a number of houses for officials, police barracks, etc., as part of their proposed programme in the transference of administration headquarters to that area, very little development has taken place during the year.

2. Following the slump, the departure of a number of Europeans from the Ndola area relieved the housing difficulties in and around that town and permitted the Medical Officer of Health and his staff to take action and have demolished many of the insanitary structures which previously had to be permitted to remain as these were the only available cover to a number of poor whites who had migrated into the area. 23 so-called European dwellings were demolished and eight back-to-back rooms were similarly dealt with.

3. Improvement of conditions at Ndola has, however, been followed by an appearance of similar structures to those demolished at Lusaka, to which district many of the people from Ndola appear to have moved. The Health Inspector at Lusaka reports numerous insanitary structures around Oosthuizen's Township and Teagle's and Botha's farms. Intensive action will have to be taken at Lusaka as soon as the financial position of the country improves.

(8) Food in Relation to Health and Disease.

(*a*) *Inspection and Control.*

Systematic inspections of all trade premises associated with the sale of foodstuffs have now been instituted at Ndola, Livingstone and Lusaka. Broken Hill and the mine towns have been visited during the year by either the Medical Officer of Health or one of the Inspectors from Ndola.

2. Reports from all these centres indicate considerable improvement in methods and standards of cleanliness, but unless inspections are made regularly it is to be expected that conditions will rapidly revert to what they were previously.

3. The inspection of all carcases at slaughter houses has been started at Livingstone, Ndola and Lusaka, inspections being done at Livingstone by an officer of the Veterinary Department.

4. Ndola reports that carcases of the following were inspected during the year:

Bovines	1,164
Sheep	122
Pigs	190

the total weight being 495,743 lbs., and pathological conditions rendering organs, carcases or portions of carcases unfit for human consumption were found as follows:

Condition.	No.	Weight in lbs.
C. bovis	65	25,088
D. hepaticum	30.2	2,924
C. cellulosae	7	1,630
Decomposition	5	350
Oedema	1	340
Cirrhosis	23	224
Tuberculosis	7	212
Sarcocysts	2	185
Bruising	6	117
C. echinococcus	30	87
Pneumonia	1	55
Pyaemia	1	55
S. hepaticum	43	47
Abscesses	5	37
Calcification	2	34
Totals	500	31,380

Cysticercus bovis was reported in 5.5 per cent. of the total bovines slaughtered.

To reduce the losses to butchers sustained through this disease the Municipal Council provided freezing facilities at the abattoir.

5. *Lusaka.*—Routine meat inspection was only begun on the 1st of July and since that date carcases as follows were inspected :

Oxen	600
Sheep	480
Pigs	156

950 lbs. of beef and 484 lbs. of pork were condemned as unfit for pathological conditions found as follows :

Beef ...	... Carcases ...	... ...	Tuberculosis and Decomposition.
	Livers ...	... ...	Flukes.
Pork	... Carcases ...	... ...	*Cysticercus cellulosae.*

6. *Livingstone.*—Routine meat inspection was only begun in this town towards the end of the year and was only possible because this Department was assisted by that of the Animal Health.

The following condemnations were made during the period :

One lung for worm cysts.
Two livers for distomiasis.
One liver for worm cysts.
One nodular tongue (aetiology unknown).

No carcases infected with *Cysticercus* were found.

A consignment of 201 lbs. of meat from Kalomo was seized and destroyed and has resulted in better transport from that district. 205 lbs. of meat found putrid in Livingstone were seized and destroyed.

(*b*) *Legislation.*

Regulations for the improved control of the following premises have received the approval of Government during the year and have now either been applied to the larger towns directly by Government or been included in municipal bye-laws :

(*a*) Abattoir and Transport of Meat.
(*b*) Aerated Water Factories.
(*c*) Tea Shops, Restaurants and Hotels.

(*c*) *Deficiency Diseases.*

Scurvy was reported from many centres, the largest number being from the Livingstone area. One case each was reported from Broken Hill and Mufulira Mines. Nkana Mine reported no cases in 1932 although in 1931 18 cases were recorded from there.

2. A small outbreak of pellagra, totalling 12 cases, was reported from the Broken Hill gaol. The outbreak was associated with over-crowding in the prison and cases ceased to occur when the over-crowding was remedied and the prisoners put on an improved diet, which included fresh vegetables and an issue of native beer.

(*d*) *Slaughter Houses.*

The slaughter house at Ndola was completed and put into use during the year.

A new slaughter house for Livingstone is in course of erection.

Broken Hill and Lusaka Township Management Boards are considering the provision of slaughter houses and it is hoped we shall be able to record progress at these two towns in 1933.

(9) Recommendations for Future Work.

At the time of writing the need for economy in Government expenditure is being stressed on all sides so that to-day one hesitates to make any recommendations which might involve Government in further expenditure.

2. It is felt, however, that in the short time that officers fully employed in preventive work have been available in this Territory, progress has been made and in centres where work has been possible a considerable reduction has taken place in epidemic and endemic disease and the towns concerned have become healthier in every way. It is urged that work begun should be maintained and, at the same time, that programmes are prepared for a more progressive policy when times are better.

SECTION IV.

PORT HEALTH WORK AND ADMINISTRATION.

The Medical Officer stationed at Abercorn continued during the year to visit Mpulungu to inspect and give pratique to the vessel calling at that port on its trips around Lake Tanganyika.

SECTION V.

MATERNITY AND CHILD WELFARE.

Livingstone.

During the year Government provided a full-time Nursing Sister for child welfare work in Livingstone. The Sister appointed arrived on the 27th March.

Previous to her arrival welfare work amongst the Europeans in the town was carried on by a Sister from the general nursing staff who held clinics at the Child Welfare Centre twice weekly.

2. The general organisation of welfare work in the town was under a voluntary committee.

3. The appointment of a full-time Sister made it possible to extend the work to the native population and Government further assisted the committee by providing a centre for natives near the Maramba Compound.

4. The work was progressing satisfactorily but was unfortunately held up owing to the Sister getting ill and no other being available as relief.

5. At the close of the year the native work was stopped and the European centre kept open with the assistance of Medical Officers and the Matron of the hospital.

6. Another voluntary society for the provision of a District Nurse had also during the year difficulty in continuing to function effectively and at present efforts are being made to amalgamate the societies and employ one Nursing Sister to continue the duties. It is hoped this endeavour will meet with success.

Ndola.

Following the rapid increase during the year of unemployed and destitute Europeans in and around Ndola, Government appointed a full-time Health Sister to the area so as to prevent the occurrence of an epidemic in the area and to assist in the care of the children who were undoubtedly being affected by the distress of their parents. From the outset the Sister appointed found her services much appreciated and it has been possible to prove that such an appointment was necessary.

2. Work amongst the European population having become established, endeavours were made to extend the service to the native population.

3. The report of the Sister in charge at Ndola for the last quarter of the year gives the following data :

Europeans.—There are 56 children over one year of age and 19 infants attending the clinic. Children of parents who are unemployed have received quinine, tonics, dressings, and, where necessary, milk daily.

One child, twelve weeks old, died of cerebral malaria.

There is a marked improvement in the health of children attending school.

One hundred and forty-four visits were paid to families in the district, which include ten anti-natal visits.

Natives.—Six hundred and forty-five cases were treated, these making 3,915 attendances in all :

Children	280
Males	260
Females	156

Of the above 36 are still attending the clinic, 10 were transferred to hospital and three died.

Kasama.

The Sister in charge of welfare work at Kasama not only conducts a centre at Kasama but tours the area visiting villages, seeing mothers and children, teaching and advising as required, and endeavouring to educate villagers to better standards of living and sanitation.

2. During the course of the year 63 villages were visited, 333 visits altogether being made. Birth and infantile mortality statistics of 15 villages were kept and from the figures obtained it is estimated that the infantile mortality for the villages works out at over 600 per 1,000 born.

3. Five thousand one hundred and fifteen attendances were made at the Kasama centre, which included 2,666 attendances of babies for weighing, etc. 125 classes for mothers were held during the year.

Mongu.

The Nursing Sister stationed at Mongu conducts a maternity and child welfare centre and during the year 878 attendances were recorded.

2. Lectures are given twice weekly on the care of infants and general hygiene.

H. DE BOER,
Deputy Director of Sanitary Services.

SECTION VI.

HOSPITALS, DISPENSARIES AND VENEREAL CLINICS.

During the year the new native hospital at Livingstone was completed and opened in November. It provides accommodation for 125 patients, and is completely fitted out to take in all classes of patient. Some doubt was expressed whether it was not on too extensive a scale for the present needs of the native community, but this has not proved to be the case. It has been fully occupied and undoubtedly marks a very big advance in the treatment of the natives.

2. A combined European and native hospital was also opened at Ndola towards the end of the year and is filling a long-felt want in that area. 30 European and 75 native beds are provided.

3. Additional accommodation and improved sanitary conveniences were installed at various native hospitals at Fort Jameson, Mongu, Choma and Broken Hill. With the exception of the hospitals at Livingstone, Broken Hill and Ndola, the accommodation and type of buildings at other stations cannot be regarded as satisfactory, but it will, unfortunately, not be possible to build modern hospitals until the financial position has materially improved. Until this occurs the policy which is being followed is to put up temporary accommodation. This, at least, permits of the admission of a greater number of patients than would otherwise be possible.

4. Venereal treatment is carried on at all medical stations, but in the outlying districts, with the exception of Barotseland, does not appear to be very prevalent. At Mongu, in Barotseland, the Medical Officer has paid special attention to this class of disease, and during the past five years has treated cases of syphilis as below :

1928	...	...	...	104
1929	...	...	...	244
1930	...	...	...	1,283
1931	...	...	...	2,158
1932	...	...	...	2,598

He states: "The results have been excellent; reliable information from my native orderlies would indicate that Kanyongo, Katongo and Lealui, places which four years ago were veritable hot-beds of the disease, are now comparatively speaking clean, and that the decrease in the incidence of syphilis, in the vicinity of Mongu and Lealui, has been truly remarkable. Cases are now coming from further afield, even as far as the Sesheke border; these are accommodated in hospital. It is reasonable to conclude that we are approaching the peak, after which a decrease in the number of cases is to be expected, owing to clinical material becoming exhausted."

In urban areas syphilis and gonorrhoea are still of fairly common occurrence, but the natives generally are alive to the benefits of treatment and readily come forward for injections. Bismuth sodium tartrate is used almost exclusively and gives excellent results.

5. Rural dispensaries at present have been developed most fully in the Kasama and Fort Jameson districts, are very popular and unquestionably accomplish much good work. In the last-named a total of 9,313 natives with a total number of 60,199 attendances were treated at the dispensaries. During the year fresh dispensaries were opened at Lundazi, Chienge and Petauke.

6. The work of training orderlies has continued at Livingstone and Balovale, though only on a modest scale. These orderlies are drafted to outstations and dispensaries from time to time. Until the country is more prosperous it will be impossible to develop the training school which was envisaged in 1930. A further difficulty which exists at the moment is the low standard of native education. It is found that most natives applying for work as orderlies have only reached Standard III, or in a few cases Standard IV. Before these natives are capable of becoming really effective it is felt that at least Standard V should be the minimum they have attained before entering a training school for medical work.

7. Though incomplete, the following figures of treatment afforded by several of the missions are of interest:

Sinde Mission	2,927	attendances.
Mukinge Hill	12,477	,,
Chipembi Mission (10 months)	6,740	,,
Chasefu Mission (6 months)	5,250	,,
Lubwa Mission	12,838	,,
Kabanga Mission (6 months)	1,047	,,
Kalomo	686	cases.
Chitambo Mission	8,442	attendances.
Sesheke Mission (6 months)	780	cases.

8. At the Government dispensary at the Maramba native compound in Livingstone a total of 7,184 out-patients, with 19,308 attendances, received treatment.

9. The mining companies possess very fully equipped hospitals at Nkana and Luanshya, which have been largely utilised by Government for the treatment of unemployed Europeans and natives. During the year they were paid the sum of £1,388 in settlement of hospital accounts, £479 in respect of Europeans and £909 in respect of natives.

Statistics relating to sickness amongst the employees of the various mines will be found in the Appendix.

10. The admissions, daily averages and deaths in the various Government European and native hospitals are shown in the following tables:

European Hospitals (1932).

Hospital.	Year.	Daily Average.	Admissions.	Deaths.
Livingstone ...	1931	14.41	572	16
	1932	13.40	449	7
Lusaka	1931	9.18	308	14
	1932	11.55	371	12
Broken Hill ...	1931	10.70	420	7
	1932	9.39	371	10
Bwana Mkubwa ...	1931	5.19	127	5
	1932	3.87	190	3
Fort Jameson ...	1931	.98	41	—
	1932	.59	36	3
Kasama	1931	.84	18	—
	1932	.70	23	2
Mongu	1931	.10	9	—
	1932	.15	5	—

Native Hospitals.

Station.	Year.	Admissions.	Deaths.
Livingstone	1931	1,171	145
	1932	1,063	115
Choma	1931	748	23
	1932	280	11
Mazabuka	1931	613	24
	1932	578	19
Lusaka	1931	542	45
	1932	612	61
Broken Hill	1931	1,316	95
	1932	716	54
Bwana Mkubwa	1931	551	34
	1932	598	32
Kasama	1931	344	6
	1932	363	6
Fort Rosebery	1931	433	4
	1932	298	10
Fort Jameson	1931	434	26
	1932	337	28
Mongu	1931	763	14
	1932	1,113	18
Balovale	1931	268	9
	1932	654	9

Native Out-Patients.

The following table shows the number of attendances of out-patients at various stations during the year:

Livingstone	7,131	Balovale	3,299
Choma	1,474	Luwingu	1,693
Mazabuka	5,247	Mpika	3,925
Lusaka	1,920	Chambesi Rural Dispensary	1,290
Broken Hill	9,525	Mongonji	10,548
Bwana Mkubwa	3,543	Njobo	25,244
Fort Rosebery	5,806	Nkonjo	1,028
Fort Jameson	13,021	Maguyu	19,968
Kasama	2,197	Kawaza	4,439
Mongu	30,494		

SECTION VII.

PRISONS AND ASYLUMS.

Central prisons, in which all long-sentence prisoners are detained, are established at Livingstone, Broken Hill, Fort Jameson, Mongu and Kasama. These are fed by the local prisons maintained on all the other Government stations.

2. All prisons and prisoners are inspected at least once a week, and daily sick parades are held.

3. Medical Officers have uniformly reported that the prisoners are adequately housed and fed in accordance with the regulations. The health of the prisoners has been good throughout the year and the only unusual occurrence was the appearance of 12 cases of pellagra at Broken Hill. These quickly cleared up on the issue of an additional ration of meat and native beer, which were calculated to supply an abundance of most of the accessory food factors. No deficiency disease occurred elsewhere.

4. The Commissioner of Prisons reports that owing to financial stringency it was impossible to carry out any extensive improvements, but minor additions were made at several gaols and in particular at Fort Jameson, where additional bath and latrine accommodation was provided for Europeans and additions made to the native women's cells.

5. Committals were as follows during 1932:

Prison.	Committals.	Daily Average No. of Prisoners.
Livingstone (Central) ...	621	241.7
Broken Hill ,, ...	696	166.26
Fort Jameson ,, ...	165	42.68
Kasama ,, ...	103	27.5
Mongu ,, ...	333	71
Ndola	521	48
Mazabuka	396	33.0
Fort Rosebery	253	20.0
Balovale	155	20.0
Lusaka	265	24.5

Statistics from the stations to which a Medical Officer is not posted have not been furnished to this Department, though these prisons are inspected when a Medical Officer visits the station, usually twice a year.

6. Details of sickness are shown in the table below:

Prison.	Daily Average in Prison.	Admitted to Hospital.	Daily Average Sick.	Deaths.
Livingstone ...	241.7	99	16.0	8
Broken Hill ...	166.26	125	18.13	1
Fort Jameson ...	42.68	33	0.32	1
Kasama	27.5	4	1.5	—
Mongu	71.0	118	0.6	—
Mazabuka	33.0	89	0.5	—
Fort Rosebery ...	20.0	9	0.5	—
Balovale	20.0	80	1.56	2
Lusaka	24.5	40	Not stated	—
Ndola	48	48	Not stated	—

7. No asylum exists in the Territory as yet, though the provision of such an institution is indicated as soon as the financial position will permit. Suspected lunatics are admitted to all prisons for observation and later, if certified, removed to a central gaol. The more dangerous cases are sent to Ingutsheni Asylum in Southern Rhodesia, where four Europeans and 27 native cases from Northern Rhodesia have been admitted up to the end of 1932.

During the year in question 71 cases of lunacy amongst Europeans (four cases) and natives were dealt with at Livingstone gaol.

METEOROLOGY.

SECTION VIII.

The following meteorological data have been supplied by the officer in charge:

ZAMBESI VALLEY, 1932.

Month.	Station: Balovale.			Station: Mongu.		
	Mean.		Monthly Mean.	Mean.		Monthly Mean.
	Max.	Min.		Max.	Min.	
January ...	86.2	63.6	74.9	94.6	67.6	81.1
February ...	79.2	63.5	71.3	83.0	65.9	74.5
March ...	87.6	68.1	77.9	83.5	65.1	74.3
April	84.6	63.0	73.8	87.0	62.7	74.9
May	82.4	56.9	69.7	85.0	58.6	71.8
June	81.1	49.1	65.1	79.9	49.6	64.7
July	81.5	46.5	64.0	80.1	46.5	63.3
August ...	86.5	52.1	69.3	86.2	53.5	69.9
September ...	94.3	61.7	78.0	95.4	62.3	78.9
October ...	94.9	64.3	79.6	99.6	66.7	83.1
November ...	90.0	63.2	76.6	—	No record	—
December ...	79.9	62.5	71.2	85.5	65.5	75.5

Month.	Station: Mwinilunga.			Station: Kalabo.		
	Mean.		Monthly Mean.	Mean.		Monthly Mean.
	Max.	Min.		Max.	Min.	
January ...	83.6	60.7	72.1	96.8	65.6	81.2
February ...	79.5	61.4	70.5	88.7	67.4	78.1
March ...	80.5	60.1	70.3	87.5	67.5	77.5
April	81.5	59.8	70.7	91.4	65.3	78.3
May	80.5	53.4	66.9	90.5	56.9	73.7
June	79.3	45.2	62.3	85.8	43.9	64.9
July	79.3	40.7	60.0	84.4	42.0	63.2
August ...	82.0	49.0	65.5	90.3	46.9	68.6
September ...	87.6	57.7	72.7	101.1	60.7	80.9
October ...	90.2	59.8	75.0	105.9	62.4	84.1
November ...	83.4	62.0	72.7	—	No record	—
December ...	79.7	62.3	71.0	92.6	67.2	79.9

Month.	Station: Mankoya.			Station: Sesheke.		
	Mean.		Monthly Mean.	Mean.		Monthly Mean.
	Max.	Min.		Max.	Min.	
January ...	86.8	67.3	77.1	87.0	62.9	74.9
February ...	82.3	67.3	74.3	82.7	64.0	73.3
March ...	84.2	66.6	75.3	79.4	61.8	70.6
April	85.8	64.3	75.1	78.8	57.9	68.3
May	83.6	58.6	71.1	—	No record	—
June	80.8	48.7	64.7	—	do.	—
July	80.7	47.3	64.0	—	do.	—
August ...	85.6	53.0	69.3	77.1	41.5	59.3
September ...	95.6	64.1	79.9	92.0	52.8	72.4
October ...	99.5	68.3	83.9	99.3	59.2	79.3
November ...	95.3	68.8	82.1	96.8	62.6	79.7
December ...	—	No record	—	85.5	64.7	75.1

LIVINGSTONE OBSERVATORY: YEAR 1932.

Month.	Mean Max.	Mean Min.	Mean Range.	Mean ½ (M+m)	R'fall ins.	Humidity.	Dir. 8 h.	Force 8 h.	Dir. 14 h.	Force 14 h.
January	92.3	64.2	28.1	78.2	8.06	80	72	0.9	90	0.9
February	89.6	64.5	24.8	77.0	2.77	73	84	0.9	45	0.4
March	85.1	61.4	23.7	73.3	8.74	77	85	1.1	100	0.6
April	84.8	60.6	24.3	72.7	4.06	71	94	1.4	97	0.8
May	79.8	55.1	24.8	67.6	0.58	*	95	1.2	90	0.9
June	76.7	43.1	33.6	59.9	Nil	*	63	0.9	76	0.8
July	76.9	41.1	35.8	59.0	Nil	53	69	0.9	77	0.9
August	81.9	47.0	34.9	64.5	Nil	43	63	0.9	72	0.9
September	94.6	60.6	34.0	77.6	Nil	35	63	0.7	74	0.7
October	99.1	68.4	30.7	83.7	0.02	27	62	1.5	69	1.4
November	99.0	68.0	31.0	83.5	0.91	39	49	0.9	72	0.9
December	87.1	67.4	19.7	77.3	6.46	71	90	0.6	153	0.2

*Unreliable.

PLATEAU STATIONS, 1932.

Month.	Station: Abercorn.			Station: Kasama.		
	Mean.		Monthly Mean.	Mean.		Monthly Mean.
	Max.	Min.		Max.	Min.	
January ...	74.0	61.4	67.7	84.0	62.4	73.2
February ...	72.0	61.0	66.5	78.8	61.7	70.3
March ...	73.3	61.1	67.2	80.4	61.8	71.1
April	71.3	63.2	66.9	79.8	63.0	71.4
May	—	No record	—	78.0	58.0	68.0
June	—	do.	—	80.0	53.5	66.7
July	—	do.	—	79.5	50.9	65.2
August ...	—	do.	—	81.7	55.1	68.4
September ...	—	do.	—	—	No record	—
October ...	—	do.	—	—	do.	—
November ...	—	do.	—	—	do.	—
December ...	—	do.	—	84.0	63.6	73.8

Month.	Station Mpika.			Station: Serenje.		
	Mean.		Monthly Mean.	Mean.		Monthly Mean.
	Max.	Min.		Max.	Min.	
January ...	76.6	64.3	70.5	79.7	62.3	71.0
February ...	73.6	63.1	68.5	75.6	63.0	69.3
March ...	73.1	62.9	68.0	75.7	60.9	68.3
April	72.9	62.2	67.5	76.1	60.1	68.1
May	68.6	57.7	63.2	70.8	54.7	62.7
June	69.8	54.4	62.1	70.6	51.6	61.1
July	67.2	52.5	59.9	69.2	49.3	59.3
August ...	71.2	55.6	63.4	71.8	52.7	62.3
September ...	79.4	62.6	71.0	82.2	60.0	71.1
October ...	81.8	65.4	73.6	84.8	62.0	73.4
November ...	82.7	66.3	74.5	87.4	64.8	76.1
December ...	—	No record	—	79.9	63.6	71.7

Month.	Station : Chinsali.			Station : Mporokoso.		
	Mean.		Monthly Mean.	Mean.		Monthly Mean.
	Max.	Min.		Max.	Min.	
January ...	80.3	62.5	71.4	80.0	62.6	71.3
February ...	75.8	61.2	68.6	77.9	62.1	70.0
March ...	78.2	61.7	69.9	—	No record	—
April	78.8	62.6	70.7	—	do.	—
May	75.2	56.1	65.7	—	do.	—
June	—	No record	—	—	do.	—
July	—	do.	—	78.3	46.4	62.3
August ...	77.7	54.2	65.9	83.5	53.3	68.4
September ...	86.4	57.6	72.0	90.6	55.8	73.2
October ...	88.5	59.9	74.2	90.2	60.7	75.5
November ...	87.0	61.9	74.5	86.7	62.6	74.7
December ...	83.7	60.6	72.1	82.5	61.5	72.0

RETURNS.

ADMINISTRATION.

TABLE I.

(a) **Staff (as at 31st December, 1932).**

European.

Director of Medical and Sanitary Services ...	1
Deputy Director of Medical Services	1
Deputy Director of Sanitary Services	1
Senior Health Officer	1
Specialist Surgical Officer	1
Medical Officers	15
Subsidised Medical Officer (Great East Road) ...	1
Health Officer	1
Pharmacist and Storekeeper...	1
Pharmacist	1
Accountant	1
Clerks	6
Nursing Sisters	30
Health Inspectors	3
Subsidised Dental Surgeons	4
	68

African.

Native Clerks	8
Orderlies	93
Other Servants	127
Native Porters	14
Office Boys	7
Sleeping Sickness Guards	3
Vaccinators	4
Labourers	31
	287

TABLE V.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1932.

ALL EUROPEAN HOSPITALS.

Diseases	Remaining end 1931	Yearly Total		Total cases Treated	Remaining end 1932
		Adms.	Deaths		
I. Epidemic, Endemic and Infectious Diseases.					
1a. Typhoid	...	9	1	9	1
b. Paratyphoid	...	10	...	10	...
3. Relapsing Fever	...	2	...	2	...
5b. Malaria Quartan	...	2	...	2	...
c. Malaria Aestivo Autumnal	12	391	3	403	2
e. Blackwater	...	22	9	22	...
8. Scarlet Fever	...	3	...	3	...
9. Whooping Cough	...	4	...	4	1
10. Diphtheria	...	1	...	1	...
11. Influenza	...	19	...	19	...
16a. Dysentery, Amoebic	...	29	1	29	...
b. Dysentery, Bacillary	2	1	1	3	...
c. Dysentery, Undefined	...	5	...	5	...
24. Cerebro-spinal Meningitis	...	5	1	5	1
25a. Rubella	...	1	...	1	...
b. Endemic Diarrhoea	...	3	1	3	...
h. Trypanosomiasis	...	1	...	1	...
31. Tuberculosis, Pulmonary	...	8	1	8	2
Tuberculosis, Spine	...	1	...	1	...
38. Syphilis	...	1	...	1	...
40. Gonorrhoea	...	4	...	4	...
II. General Diseases not mentioned above.					
44. Carcinoma of Stomach	...	2	1	2	...
Cancer of Liver	...	1	...	1	...
45. Cancer of Intestines	...	2	...	2	...
46. Cancer Undefined	...	1	...	1	...
48. Epithelioma of Face	...	1	...	1	...
50. Tumours, non-malignant	...	4	...	4	...
51. Acute Rheumatism	...	4	...	4	...
Rheumatic Fever	...	1	...	1	...
52. Chronic Rheumatism	...	2	...	2	...
57. Diabetes	...	4	...	4	2
58b. Anaemia	...	1	...	1	...
66. Alcoholism	...	5	...	5	...
III. Affections of the Nervous System and Organs of the Senses.					
74. Apoplexy	...	1	1	1	...
75b. Paralysis	...	3	1	3	...
Spastic Paraphagia	...	1	...	1	1
78. Epilepsy	...	3	...	3	1
82a. Hysteria	...	1	...	1	...
b. Neuritis	...	2	...	2	...
c. Neurasthenia	...	8	...	8	...
85b. Conjunctivitis	...	8	...	8	...
e. Other affections of the Eye	...	6	...	6	...
86. Other affections of the Ear, etc.	...	3	...	3	...
IV. Affections of the Circulatory System.					
89. Angina Pectoris	...	2	...	2	1
90a. Other diseases of the Heart	...	6	2	6	...
90.b Myocarditis	...	5	1	5	...
91a. Aneurism	...	1	...	1	...
92. Thrombosis of Femoral Vein	...	1	...	1	...
93. Haemorrhoids	...	2	...	2	...
94. Lymphangitis	...	1	...	1	1
95. Haemorrhage of undetermined cause	...	8	...	8	...
Carried forward	14	612	24	626	13

TABLE V.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1932.

ALL EUROPEAN HOSPITALS.

	Diseases	Remaining end 1931	Yearly Total		Total cases Treated	Remaining end 1932
			Adms.	Deaths		
	Brought forward ...	14	612	24	626	13
V.	**Affections of the Respiratory System.**					
97.	Adenoids	...	9	...	9	...
98.	Laryngitis...	...	3	...	3	...
a.	Bronchitis, Acute	...	7	...	7	...
99b.	Bronchitis, Chronic	...	5	...	5	2
100.	Pneumonia, Broncho	...	11	3	11	...
101a.	Pneumonia, Lobar	1	5	1	6	...
b.	Pneumonia, Unclassified	...	2	...	2	...
102.	Pleurisy	1	6	...	7	...
105.	Asthma	...	3	...	3	...
VI.	**Diseases of the Digestive System.**					
108.	Edentulation	...	63	...	63	...
a.	Haemorrhage from Gums	...	1	...	1	...
109.	Tonsillitis	...	41	...	41	...
111a.	Ulcer of the Stomach	...	3	...	3	...
b.	Ulcer of the Duodenum	1	3	...	4	1
112.	Gastritis	1	8	...	9	...
	Intestinal Obstruction	...	1	...	1	...
113.	Diarrhoea and Enteritis under 2 years	...	2	1	2	...
114.	Diarrhoea and Enteritis over 2 years ...	...	15	...	15	...
	Colitis	...	1	...	1	1
116.	Cestoda	...	4	...	4	...
117.	Appendicitis	3	58	1	61	1
118.	Hernia	...	5	...	5	...
119a.	Fistula	...	4	...	4	...
b.	Constipation	...	4	...	4	...
123.	Biliary Calculus	...	5	...	5	...
124.	Cholecystitis	...	3	...	3	...
	Jaundice	...	3	...	3	...
	Abscess of the Liver	...	1	1	1	...
126.	Peritonitis	...	1	...	1	...
127.	Other affections of the Digestive System	...	4	...	4	...
VII.	**Diseases of the Genito-Urinary System (Non-Venereal).**					
128.	Nephritis, Acute	...	3	...	3	...
	Nephritis, Chronic	...	3	...	3	1
129.	Circumcision	...	7	...	7	...
131.	Pyelitis	...	18	...	18	...
132.	Urinary Calculus...	...	7	1	7	...
133.	Cystitis	1	10	...	11	1
	Vesical Neoplasm	...	1	...	1	...
134b.	Other diseases of the Urethra	...	4	...	4	...
136.	Orchitis	...	1	...	1	...
	Phimosis	...	1	...	1	...
	Vaginitis	...	2	...	2	1
138.	Salpingitis	1	7	...	8	1
139.	Fibroid	...	2	...	2	...
140.	Metrorrhagia	1	6	...	7	...
141a.	Cervicitis	1	1	...	2	...
	Endometritis	1	33	...	34	...
b.	Dysmenorrhoea	...	12	...	12	...
b.	Other affections of the Female Genital Organs	...	13	...	13	...
142.	Mastitis	...	1	...	1	...
	Abscess of Breast	...	3	...	3	...
	Carried forward	26	1,028	32	1,054	22

TABLE V.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1932.

ALL EUROPEAN HOSPITALS.

Diseases	Remaining end 1931	Yearly Total		Total cases Treated	Remaining end 1932
		Adms.	Deaths		
Brought forward ...	26	1,028	32	1,054	22
VIII. Puerperal State.					
143a. Normal Labour	2	120	...	122	5
b. (*a*) Abortion	...	17	...	17	...
c. Caesarean Section	...	1	...	1	...
d. (*c*) Other accidents of pregnancy ...	...	14	...	14	...
145. Other accidents of Parturition	...	2	...	2	...
146. Puerperal Septicaemia	...	1	...	1	...
149. Sequelae of Labour	...	1	...	1	...
IX. Affections of the Skin and Cellular Tissues.					
152. Boils	...	4	...	4	1
Carbuncle	...	3	...	3	...
153. Abscess	...	8	...	8	...
Whitlow	...	2	...	2	...
Cellulitis	...	46	1	46	1
155. Eczema	...	1	...	1	...
Ulcers	...	7	...	7	...
Urticaria	...	1	...	1	...
Myiasis	...	1	...	1	...
Filariasis	...	2	...	2	...
X. Diseases of the Bones and Organs of Locomotion (other than Tuberculous).					
155. Tropical Ulcers	...	5	...	5	...
156. Osteitis	...	1	...	1	...
Osteomyelitis	...	3	...	3	...
157. Arthritis	...	5	...	5	...
158. Sciatica	...	1	...	1	...
XII. Diseases of Infancy.					
161. Premature Birth	...	3	3	3	...
162. Other affections of Infancy	...	30	...	30	1
163. Malnutrition	1	...	...	1	...
XIV. Affections produced by External Causes.					
175. Food Poisoning	...	4	...	4	...
177. Accidental Poisoning	...	1	...	1	...
178. Burns by Fire	...	5	...	5	...
183. Wounds by Firearms	...	2	...	2	...
185. Wounds by Fall	...	9	...	9	...
188. Wounds by Railway	...	11	1	11	...
189. Injuries inflicted by Animals, Bites, etc.	...	1	...	1	...
201a. Dislocations	...	3	...	3	...
b. Sprains	...	5	...	5	...
c. Fractures	...	31	...	31	1
202. Other external injuries	...	27	...	27	2
XV. Ill-defined Diseases.					
Observation	2	1	...	3	...
Debility	...	2	...	2	...
Laparotomy	1	...	...	1	...
Hyperpyrexia	...	1	...	1	...
Total	32	1,410	37	1,442	33

TABLE Va.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1932.

ALL NATIVE HOSPITALS.

Diseases	Remaining end 1931	Yearly Total		Total cases treated	Remaining end 1932
		Adms.	Deaths		
I. Epidemic, Endemic and Infectious Diseases.					
1a. Typhoid	...	6	4	6	...
3. Relapsing Fever	...	23	1	23	...
5c. Malaria	14	676	20	690	*12
5e. Blackwater	...	2	...	2	...
6. Smallpox	...	4	...	4	1
7. Measles	1	28	...	29	1
9. Whooping Cough	...	2	...	2	...
10. Diphtheria	...	1	1	1	...
11. Influenza	8	438	50†	446	9
13. Mumps	...	14	...	14	...
16a. Dysentery, Amoebic	2	56	9	58	...
b. Dysentery, Bacillary	1	8	2	9	...
c. Dysentery, Unclassified	1	46	3	47	...
20. Leprosy	32	71	3	103	55
21. Erysipelas	...	1	1	1	...
24. Cerebro-spinal Meningitis	...	5	4	5	...
25b. Varicella	...	92	...	92	4
g. Yaws	26	315	...	341	13
n. Trypanosomiasis	1	2	2	3	...
31. Tuberculosis, Pulmonary	3	35	24	38	12
32. Tuberculosis of Meninges	...	1	...	1	...
33. Tuberculosis of Intestines	...	2	2	2	...
34. Tuberculosis of Spine	1	1	...	2	...
35. Tuberculosis of Bones	...	1	...	1	...
36c. Tuberculosis of Lymphatic System	...	1	1	1	1
38a. Syphilis, Primary	15	354	...	369	26
b. Syphilis, Secondary	58	602	1	660	116
c. Syphilis, Tertiary	...	31	4	31	4
d. Syphilis, Hereditary	...	40	10	40	...
e. Syphilis, Undefined	58	405	4	463	28
39. Soft Chancre	...	18	...	18	2
40. Gonorrhoea	10	151	2	161	9
41. Septicaemia	...	13	13	13	...
II. General Diseases not mentioned above.					
44. Carcinoma Liver	...	1	1	1	...
45. Cancer of Rectum	...	1	1	1	...
48. Sarcoma	...	1	...	1	1
49. Cancer—Malignant Tumours	...	5	2	5	...
50. Tumours—Non-malignant	1	17	...	18	...
52. Rheumatism	4	117	1	121	1
53. Scurvy	3	120	4	123	22
54. Pellagra	...	12	...	12	...
56. Rickets	...	1	...	1	...
58. Anaemia	...	13	...	13	5
59. Hypopituitarism	...	1	...	1	...
60b. Thyro-adenoma	1	1	...	2	...
64. Splenic Abscess	1	2	1	3	...
68. Chronic Poisoning(Vegetable)	...	1	...	1	...
III. Affections of the Nervous System and Organs of the Senses.					
71. Basal Meningitis	...	2	2	2	...
73. Cerebella Abscess	...	1	1	1	...
74b. Embolism	...	2	1	2	...
74a. Central Haemorrhage	...	3	2	3	1
c. Central Thrombosis	...	1	1	1	...
Carried forward	241	3,747	178	3,988	323

*Malarial parasites were found in 211 or 20 per cent of Livingstone patients.
†11 moribund on admission to Livingstone Hospital.

TABLE Va.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1932.

ALL NATIVE HOSPITALS.

Diseases	Remaining end 1931	Yearly Total		Total cases treated	Remaining end 1932
		Adms.	Deaths		
Brought forward ...	241	3,747	178	3,988	323
III. Affections of the Nervous System and Organs of the Senses—*continued.*					
77. Mental Alienation	...	28	1	28	2
78. Epilepsy	...	21	1	21	1
80. Infantile Convulsions	...	1	1	1	...
82a. Hysteria	...	1	...	1	...
82b. Neuritis	...	4	...	4	2
c. Neurosis	...	1	...	1	...
83. Cerebral Softening	...	1	1	1	...
85a. Diseases of the Eye	1	23	...	24	...
85b. Conjunctivitis	5	231	...	236	14
c. Other affections of the Eye	...	28	...	28	3
86. Otitis Media	1	14	...	15	1
IV. Affections of the Circulatory System.					
88. Endocarditis	...	3	...	3	...
90a. Valvular Disease of the Heart	...	7	5	7	...
b. Myocarditis	...	5	4	5	...
91a. Aneurysm	1	...	1	1	...
92. Embolism	...	2	1	2	...
93. Haemorrhoids	...	2	...	2	...
Varicose Veins	...	1	...	1	...
Phlebitis	...	2	...	2	...
94. Lymphadenitis	...	16	...	16	1
95. Epistaxis	...	4	...	4	...
95. Haemorrhage of undetermined cause ...	1	2	1	3	...
96. Syncope	...	2	...	2	...
V. Affections of the Respiratory System.					
97. Rhinitis	...	6	...	6	...
Coryza	...	4	...	4	...
98. Laryngitis...	...	1	...	1	...
99a. Bronchitis, Acute	2	20	...	22	3
99b. Bronchitis, Chronic	...	60	1	60	1
100. Pneumonia, Broncho	...	21	11	21	1
101. Pneumonia, Lobar	1	53	12	54	3
a. Pneumonia, Influenzal	2	5	3	7	...
b. Pneumonia, Unclassified	2	116	30	118	2
102. Pleurisy	1	10	...	11	...
Empyema	...	1	1	1	...
105. Asthma	...	3	...	3	...
Malaena Neonatorum	...	1	1	1	...
107. Abscess of Lung	...	1	...	1	...
104. Pul. Gangrene	...	2	2	2	...
T.B. Left Bronchial Tube	...	1	1	1	...
VI. Diseases of the Digestive System.					
108a. Dental Caries	...	5	...	5	...
Gingivitis	...	1	...	1	...
Alveolar Abscess	1	3	...	4	...
Pyorrhoea...	...	2	...	2	...
b. Stomatitis...	...	4	...	4	...
Glossitis	...	1	...	1	...
109. Tonsillitis	...	19	1	19	...
111b. Duodenal Ulcer	...	3	...	3	...
112c. Gastritis	...	5	1	5	...
113. Enteritis under 2 years	...	34	4	34	...
Enteritis, 2 years and over	7	42	3	49	4
114. Colitis	...	23	4	23	1
Carried forward	266	4,593	269	4,859	362

TABLE Va.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1932.

ALL NATIVE HOSPITALS.

	Diseases	Remaining end 1931	Yearly Total		Total cases treated	Remaining end 1932
			Adms.	Deaths		
	Brought forward ...	266	4,593	269	4,859	362
VI.	**Diseases of the Digestive System.**—*contd.*					
115.	Ankylostomiasis	...	130	6	130	*8
116a.	Cestoda	1	7	...	8	...
b.	Schistosoma mansoni	...	1	...	1	...
118.	Hernia	2	32	3†	34	...
119a.	Fistula	...	4	...	4	...
b.	Constipation	...	23	...	23	...
	Obstruction	...	4	2	4	...
122b.	Cirrhosis of Liver	2	3	3	5	1
124.	Jaundice	...	1	...	1	...
	Colic	...	1	...	1	...
126.	Peritonitis	...	3	3	3	...
128.	Nephritis, Acute	...	5	2	5	...
129.	Nephritis, Chronic	...	10	2	10	1
VII.	**Diseases of the Genito-Urinary System (Non-Venereal).**					
130b.	Schistosomiasis	2	51	2	53	1
c.	Bilharzia	...	3	...	3	1
131.	Pyonephrosis	...	1	1	1	...
133.	Cystitis	2	12	1	14	...
134b.	Fistula, Urethral...	...	2	...	2	...
	Fistula, Urinary	...	3	...	3	...
136.	Orchitis	1	7	...	8	2
	Hydrocele...	...	12	1	12	...
	Cyst of Penis	...	2	...	2	...
139.	Uterine Fibroid	...	1	...	1	...
141b.	Endometritis	...	2	...	2	...
	Displacement of Uterus	...	2	...	2	...
142.	Mastitis	...	2	...	2	...
	Mammary Abscess	...	3	...	3	...
135.	Prostatitis...	...	1	...	1	...
VIII.	**Puerperal State.**					
143a.	Normal Labour	...	32	...	32	...
b.	(*a*) Abortion	...	18	...	18	...
	(*b*) Accidents of Pregnancy	...	2	2	2	...
	(*c*) Retained Placenta	...	3	...	3	...
145.	Other accidents of Parturition	...	6	2	6	...
146.	Puerperal Septicaemia	...	3	3	3	2
IX.	**Affections of the Skin.**					
151.	Gangrene	1	2	...	3	...
152.	Boils	1	4	...	5	...
153.	Abscess	13	140	...	153	11
	Whitlow	...	5	...	5	1
	Cellulitis	24	231	2	255	18
154a.	Tinea	...	1	...	1	...
b.	Scabies	2	48	...	50	...
155.	Itch	...	5	...	5	1
	Chigoes	...	24	...	24	...
	Tropical Ulcers	22	201	...	223	44
	Ulcers	5	79	...	84	4
	Varicose Veins	...	1	...	1	...
	Herpes	...	1	...	1	...
	Acne	...	1	...	1	...
	Ainhum	...	1	...	1	...
	Carried forward	344	5,729	304	6,073	457

*Ankylostoma Ova were found in 439 or 41 per cent of the patients in Livingstone.
†Deaths due to strangulation.

TABLE Va.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1932.

ALL NATIVE HOSPITALS.

Diseases	Remaining end 1931	Yearly Total		Total cases treated	Remaining end 1932
		Adms.	Deaths		
Brought forward ...	344	5,729	304	6,073	457
IX. Affections of the Skin.—*continued.*					
Dermatitis	...	3	...	3	1
Elephantiasis	...	10	...	10	3
Impetigo	...	4	...	4	...
Plantar Keratosis	...	1	...	1	...
Other Skin Diseases	...	3	...	3	...
X. Diseases of the Bones and Organs of Locomotion (other than Tuberculous).					
156. Osteitis	1	9	1	10	2
Osteomyelitis	1	5	1	6	1
Periostitis	...	3	3	3	...
157. Synovitis	2	13	...	15	2
Arthritis	...	8	...	8	...
Bursitis	...	1	...	1	...
158. Tropical Myositis	...	22	...	22	5
Rheumatism	...	10	...	10	...
XII. Diseases of Infancy.					
160. Congenital Debility	...	3	3	3	...
161. Premature Birth	...	8	8	8	...
162. Infantile Diarrhoea	...	2	1	2	...
XIII. Affections of Old Age.					
164. Senility	2	1	2	3	...
XIV. Affections produced by External Causes.					
176. Snake Bite	...	32	1	32	11
Insect Bites	...	4	...	4	3
177. Poisoning—Tetra-form	...	1	1	1	...
178. Burns	6	108	10	114	23
Scalds	...	6	...	6	...
179. Burns other than by fire	...	1	...	1	...
182. Accidental Drowning	...	1	...	1	...
183. Wounds by firearms	1	10	1	11	2
Wounds by cutting or stabbing instruments	4	58	1	62	9
185. Wounds by fall	2	238	6	240	14
186. Wounds in mines	2	...	...	2	...
188. Wounds by crushing or railway accidents	...	19	1	19	6
189. Injuries inflicted, animal bites, etc. ...	4	34	4	38	4
195. Lightning Stroke	...	2	...	2	...
198. Murder—cutting instruments	...	4	4	4	...
201a. Dislocation	...	4	...	4	1
b. Sprain	...	8	...	8	...
c. Fracture	2	48	1	50	11
202. Other external injuries	26	154	1	180	16
XV. Ill-defined Diseases.					
205. Debility	...	1	1	1	...
a. Ascites	...	7	2	7	...
Asthenia	1	15	3	16	...
Oedema	1	2	...	3	...
Unclassified	26	2	1	28	3
b. Malingering	...	11	...	11	...
Observation cases	...	4	...	4	...
XVI. Diseases, the total of which have not caused 10 deaths	8	4	2	12	...
Total	433	6,613	363	7,046	574

OUT-PATIENTS.

The following tables shew the number of out-patients treated at different stations during the year :

TABLE VI.

EUROPEANS.

Station	Cases	Deaths
Livingstone	1,810	...
Choma	151	1
Mazabuka	238	2
Lusaka	1,222	...
Fort Jameson	20	...
Mongu	98	2
Total	3,539	5

TABLE VIa.

NATIVES.

Station	Cases
Livingstone	7,131
Choma	495
Mazabuka	5,247
Lusaka	1,920
Broken Hill	9,525
Bwana Mkubwa	592
Kasama	2,122
Fort Rosebery	5,806
Fort Jameson	1,891
Mongu	5,657
Balovale	761
Total	41,147

APPENDIX.

RHODESIA BROKEN HILL DEVELOPMENT COMPANY, LTD.

DAILY AVERAGE NATIVES EMPLOYED 834 (Including Contractors' Labour).

Diseases	Cases Treated	Deaths	Mortality Cases %	Sickness Incidence Rate Per Mille Employed	Death Rate Per Mille Employed
Malaria	2	...	...	2.40	...
Blackwater	12	...	...	14.41	...
Typhoid	1	1	100.00	1.19	1.19
Varicella	1	...	...	1.19	...
Other forms of Tuberculosis	1	1	100.00	1.19	1.19
Broncho Pneumonia—Surface	17	...	...	20.38	...
Lobar Pneumonia—Surface	1	...	...	1.19	...
Influenza	36	...	...	43.16	...
Syphilis	4	...	...	4.81	...
Tropical Ulcers	7	...	...	8.41	...
Splenic Abscess	2	...	...	2.40	...
Accidents :					
(*a*) Arising out of employment ...	69	...	...	82.85	...
(*b*) Not arising out of employment ...	6	...	...	7.41	...
Minor Ailments	17	...	...	20.38	...
Septic Wounds	1	...	...	1.19	...
Measles	1	...	...	1.19	...
Minor Surgical	5	...	...	6.01	...
Total ...	183	2	1.09	219.42	2.39

BWANA MKUBWA MINE.

Daily Average Natives Employed 255 (Including Contractors' Labour).

Diseases	Cases Treated	Deaths	Mortality Cases %	Sickness Incidence Rate Per Mille Employed	Death Rate Per Mille Employed
Malaria	13	...	...	50.98	...
Rheumatic Fever	1	...	...	3.92	...
Diarrhoea	2	...	...	7.84	...
Dysentery (Bacillary)	3	...	...	11.76	...
Broncho Pneumonia—Surface	3	...	...	11.76	...
Lobar Pneumonia—Surface	1	...	...	3.92	...
Syphilis	2	...	...	7.84	...
Tropical Ulcer	1	...	...	3.92	...
Accidents :					
(*a*) Arising out of employment ...	35	...	...	137.25	...
(*b*) Not arising out of employment ...	7	...	...	27.45	...
Minor Ailments	2	...	...	7.84	...
Septic Wounds	1	...	...	3.92	...
Conjunctivitis	6	...	...	23.53	...
Total ...	77	...	...	301.96	...

NKANA MINE.

DAILY AVERAGE NATIVES EMPLOYED 3,336 (Including Contractors' Labour).

Diseases	Cases Treated	Deaths	Mortality Cases %	Sickness Incidence Rate Per Mille Employed	Death Rate Per Mille Employed
Malaria Fever	45	...	...	13.48	...
Blackwater	6	...	...	1.79	...
Typhoid Fever	1	1	100.00	.29	.29
Varicella	7	...	...	2.09	...
Diarrhoea	11	...	...	3.29	...
Amoebiasis	7	...	...	2.09	...
Dysentery (Bacillary)	3	...	...	.89	...
Other diseases of the Chest	52	...	...	15.58	...
Phthisis	4	...	...	1.16	...
Broncho Pneumonia—Surface	3	...	...	.89	...
Broncho Pneumonia—Underground ...	3	1	33.33	.89	.29
Lobar Pneumonia—Surface	28	8	28.57	8.39	2.39
Lobar Pneumonia—Underground ...	110	34	25.36	32.97	10.19
Influenzal Pneumonia—Surface ...	18	...	...	5.39	...
Influenzal Pneumonia—Underground ...	46	1	2.17	13.78	.29
Influenza	112	...	...	33.57	...
Syphilis	22	...	...	6.59	...
Gonorrhoea	1	...	...	.29	...
Pneumococcal Meningitis...	1	1	100.00	.29	.29
Yaws	2	...	...	.58	...
Filariasis	3	...	...	.89	...
Tropical Ulcer	1	...	...	.29	...
Bilharzia	1	...	...	.29	...
Accidents :					
(*a*) Arising out of employment ...	1,096	7	.63	328.53	2.09
(*b*) Not arising out of employment ...	141	...	...	42.26	...
Carcinoma of Liver	1	1	100.00	.29	.29
Conjunctivitis	45	...	...	13.48	...
Minor Ailments	58	...	...	17.38	...
Debility	48	...	...	14.38	...
Skin Diseases	3	...	...	.89	...
Other Surgical	36	1	2.77	10.79	.29
Pyaemia	2	1	50.00	.58	.29
Total ...	1,917	57	2.97	574.64	17.14

ROAN ANTELOPE MINE.

DAILY AVERAGE NATIVES EMPLOYED 2,317 (Including Contractors' Labour).

Diseases	Cases Treated	Deaths	Mortality Cases %	Sickness Incidence Rate Per Mille Employed	Death Rate Per Mille Employed
Malaria Fever	30	...	...	12.94	...
General Peritonitis	1	1	100.00	.43	.43
Causes Unknown	1	1	100.00	.43	.43
Diarrhoea	8	...	...	3.44	...
Dysentery (Bacillary)	5	...	...	2.15	...
Tuberculosis (Pulmonary)	2	2	100.00	.86	.86
Tuberculosis (Miliary)	1	1	100.00	.43	.43
Other forms of Tuberculosis	2	1	50.00	.86	.43
Broncho Pneumonia—Surface	5	1	20.00	2.15	.43
Broncho Pneumonia—Underground ...	15	2	13.33	6.45	.86
Lobar Pneumonia—Surface	1	...	...	.43	...
Lobar Pneumonia—Underground ...	2	...	...	.86	...
Influenza	79	...	...	...	...
Pleurisy	1	...	...	.43	...
Trypanosomiasis	1	...	...	.43	...
Syphilis	13	...	...	5.59	...
Gonorrhoea	1	...	...	.43	...
Disseminated Myelitis	1	1	100.00	.43	.43
Acute Entero-colitis	1	1	100.00	.43	.43
Cerebral Haemorrhage	1	1	100.00	.43	.43
Carcinoma of Pancreas	1	1	100.00	.43	.43
Accidents :					
(*a*) Arising out of employment ...	418	3	.72	180.41	1.29
(*b*) Not arising out of employment ...	198	1	.40	85.45	.43
Homicide—Acute Pyelo Nephritis ...	1	1	100.00	.43	.43
Other Diseases as under :					
Diseases of the Eye	43	...	...	18.55	...
Septic Wounds	22	...	...	9.49	...
Minor Ailments	217	...	...	93.65	...
Acute Toxic Purpura	1	1	100.00	.43	.43
Strangulated Inguinal Hernia	1	1	100.00	.43	.43
Acute Endocarditis	1	1	100.00	.43	.43
Suppurative Retroperitoneal Lymphadenitis	1	1	100.00	.43	.43
Total ...	1,075	22	2.04	463.96	9.49

MUFULIRA COPPER MINE.

Daily Average Natives Employed 187 (Including Contractors' Labour).

Diseases	Cases Treated	Deaths	Mortality Cases %	Sickness Incidence Rate Per Mille Employed	Death Rate Per Mille Employed
Malaria	7	...	...	37.43	...
Scurvy	1	...	...	5.34	...
Diarrhoea	1	...	...	5.34	...
Broncho Pneumonia—Surface	2	...	...	10.69	...
Pleurisy	2	...	...	10.69	...
Syphilis	3	...	...	16.04	...
Gonorrhoea	4	...	...	21.92	...
Malignant Diseases	4	...	...	21.92	...
Accidents :					
(*a*) Arising out of employment ...	10	...	...	53.42	...
(*b*) Not arising out of employment ...	3	...	...	16.04	...
Minor Ailments	13	...	...	69.51	...
Septic Wounds	41	...	...	219.25	...
Peritonitis and Gangrene	1	...	...	5.34	...
Conjunctivitis	2	...	...	10.69	...
Total ...	94	...	...	502.67	...